Is Social Capital Declining in the United States? A Multiple Indicator Assessment[1]

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Despite a great deal of interest in a possible decline of social capital in the United States, scholars have not reached a consensus on the trend. This article improves upon previous research by providing a model of social capital that has explicit links to theories of social capital and that analyzes multiple indicators of social capital over a 20-year period. The results do not consistently support Putnam's claim of a decline in social capital, showing instead some decline in a general measure of social capital, a decline in trust in individuals, no general decline in trust in institutions, and no decline in associations.

Concern about a decline in community is a recurring theme in classical and contemporary sociology. In fact, it could be argued that the birth of sociology occurred in concerns about potential declines in community due to industrialization and the advent of modernity. Early sociologists spoke of a shift from Gemeinschaft to Gesellschaft (Tönnies [1887] 1957) or about the impact of the metropolis on human life (Simmel [1903] 1950). This decline-of-community thesis has continued to resurface periodically (e.g., Wirth 1938; Stein 1960; see Lee et al. [1984] or Wellman, Carrington, and Hall [1988] for reviews of the decline-of-community theses and opposing viewpoints.)

Many theorists also related declines in community to political outcomes. This began with Tocqueville ([1835, 1840] 1990) who posited a link between American democracy and Americans' high rates of joining voluntary associations. In later iterations, mass society theorists (e.g., Arendt 1948) claimed that when there is a lack of community, it provides a breeding ground for totalitarianism. So time and time again, individuals raised

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the question of a decline in community and its potential political outcomes.

In 1995, Robert Putnam published the thesis that America's social capital is declining. He cited decreasing voter turnout and declining membership in groups such as the PTA and bowling leagues as evidence for a general decline in the ties linking people in the United States to each other and to the political system. The result, Putnam claims, is a massive threat to the successful maintenance of American democracy. His thesis is therefore the latest installment in this long history of speculation on declines in community and its consequences.

What does Putnam mean by a decline in social capital? Social capital is the idea that individuals and groups can gain resources from their connections to one another (and the type of these connections). These resources can be used to produce certain goods. For example, consider a neighborhood with high social capital. In that neighborhood, the neighbors know each other, talk to each other often, and trust each other. In that neighborhood, a mother might feel comfortable letting her child walk alone to a nearby park. In a neighborhood with lower social capital, where the neighbors do not know or trust one another, the mother would either have to walk with her child to the park or hire someone to do it for her.

Putnam is concerned with social capital at a wider level. So, by a decline in America's social capital, he is arguing that certain aspects of social behavior, specifically citizens' rates of joining voluntary associations, citizens' trust in one another, and citizens' rates of voting, are declining. We should therefore see a subsequent decline in certain public goods, such as an efficient democracy.

Like its predecessors, Putnam's thesis sparked a huge debate both in the academic and popular press. For example, *Public Perspective* (1996) and *American Behavioral Scientist* (1997) ran entire issues on social capital and civic decline. Outside of the academic realm, Putnam's thesis appeared in magazines such as *American Prospect* (Putnam 1996) and was critiqued in *Atlantic Monthly* (Lemann 1996). Newspaper commentators used Putnam's thesis to highlight and lament declines in group membership (e.g., Ehrenholt 1995). Putnam was even the subject of profiles in *People* and *U.S. News and World Report.* For all involved, the potential decline of social capital touches on the classic concern that the underpinnings of U.S. democracy may be coming undone.

Despite the amount of interest in a possible decline of U.S. social capital, however, scholars have not reached a consensus on the trend. Putnam has claimed that social capital is in decline while others (e.g., Ladd 1996) have argued that social capital has remained stable over time. I believe this lack of agreement reflects two problems in previous assessments of social capital in the United States. First, there is a large gap between the concept

of social capital and its measurement. Previous studies provide little rationale for how their measures of social capital connect to the theoretical definition of social capital. The problem is compounded by a current lack of consensus on the meaning of the term. The term "social capital" is used in many recent articles but in vastly different ways (e.g., Sanders and Nee 1996; Hagan, MacMillan, and Wheaton 1996; Schiff 1992). The lack of an obvious link between theory and measurement has, in some cases, led to the use of questionable indicators of social capital. For example, voting should be considered an *outcome* of social capital rather than a part of social capital itself.

The second problem with previous assessments of social capital is that they rely on single indicators. Social capital is a general concept, and we should not expect that it can be captured with just one variable. Many different measures can be and have been posited as indicators of social capital. Without strong ties to theory, however, researchers can choose among many pieces of data that provide contrary pictures of the health of social capital in the United States. Also, using measures from a variety of different sources means that assessment is difficult due to incomparability in sampling designs and question wording (Wuthnow 1997). Finally, by using single observed variables, researchers cannot account for measurement error, which we would expect to find in the survey questions used to assess social capital.

In short, to provide evidence for or against recent changes in U.S. social capital, researchers have tracked the mean of a single observed variable over time. If the *relationship* between that variable and the level of actual, unmeasured social capital in the United States has changed over time, however, it could produce a change in the mean of the observed variable, without truly reflecting a change in social capital. For example, survey questions can be interpreted differently by respondents in two time periods. If respondents relax their interpretation of trust between 1975 and 1985, we could see a change in measured trust even if there was no change in the actual level of trust over the 10-year period. Single indicators cannot address this problem.[2]

Previous assessments of social capital are also limited by their singular

[2] Other critiques of analyses of social capital note that the *GSS* questions have remained stable while new types of groups have appeared in the United States (Baumgartner and Walker 1988). (The argument is refuted by Smith [1990].) This means that groups, such as environmental groups or other new social movements, which have been growing rapidly over the time period, could be undercounted in the *GSS* measure. Putnam claims that it is forms of group participation requiring minimal effort, such as signing petitions and writing checks, that have increased, thereby accounting for the increase in national environmental organizations, such as the Sierra Club, and organizations like the American Association of Retired Persons (AARP).

focus on change in the *level* of social capital over time. Another important question concerns a possible change in the *dispersion,* or variance, of social capital over time. The issue is similar to income inequality—while the mean level of income in a country might remain the same over time, increasing dispersion would indicate increasing income inequality. To fully understand shifts in social capital over time, therefore, we should investigate possible changes in both the level and dispersion.

The problems with previous assessments of social capital indicate that the current debate over social capital in the United States amounts to a great deal of arguing over selective pieces of information, drawn from different sources and analyzed with weak statistical techniques.[3] Yet, research into the causes of the decline in social capital is moving ahead, under the assumption that it has declined over time (e.g., Brehm and Rahn 1997).

In this article, I address the limitations of previous research by providing a model of social capital that makes explicit links to theory and analyzes multiple indicators of social capital from the same data source. With multiple indicators, I can more adequately gauge the concept of social capital and allow for measurement error. I also illustrate that the relationship between my measures of social capital and the theoretical concept remains stable over time. To begin, I present a theoretical section that defines social capital and distinguishes between the various uses of the term. Next, I present a model of social capital at the national level and discuss the data and variables I use to estimate it. I then test whether my chosen measures have a stable relationship with social capital over time and include a test for change in the variance of social capital over time. In the final sections, I estimate change in the level of social capital over a 20-year period, considering both linear and nonlinear trends.

WHAT IS SOCIAL CAPITAL?

The idea of social capital can be placed in a historical series of ideas on different forms of capital. Originally, the concept of physical capital was introduced to explain the ways that physical implements, such as tools or machines, could facilitate economic production. Then Becker (1964),

[3] Similar concerns surfaced in the past under different names, e.g., "the confidence gap" (Lipset and Schneider 1983), "the crisis of legitimacy" (Lehman 1987), "mass society" (Halebsky 1976). In addition, many theorists viewed aspects of social capital, such as voluntary associations or trust, as central to a successful social life. A list of social theorists who commented on the importance of trust or associations to social life would read like a "who's who" of social theory—Marx, Durkheim, Weber, Locke, Simmel. For a discussion of the classical roots of social capital, see Portes and Sensenbrenner (1993).

building on Schultz (1961), presented the notion of human capital and argued that individuals, through education or job training, can hold *within themselves* the ability to facilitate production.[4] The newer concept of social capital acknowledges that certain social relations (e.g., dense networks, norms of reciprocity) can also facilitate production. In addition, with the introduction of social capital, researchers began to speak of efficiency gains in noneconomic goods.

The concept of social capital was introduced by two major social scientists—Bourdieu (1983) and Coleman (1988, 1990).[5] A number of other authors, from a variety of fields, also used the term (e.g., Hanifan 1920; Jacobs 1961; Loury 1977), but it remained obscure until Bourdieu and Coleman popularized it.[6] Bourdieu (1983, p. 248) provides a concise definition: "Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group." Social capital requires more than just a network of ties, however. Bourdieu notes that social capital also involves "transforming contingent relations, such as those of neighborhood, the workplace, or even kinship, into relationships that are at once necessary and elective, implying durable obligations subjectively felt (feelings of gratitude, respect, friendship, etc.)" (1983, pp. 249–50). Thus, network ties must also be of a particular type—trusting and positive.

For Coleman (1988, p. S98), the concept of social capital illustrates how the social structure of a group can function as a resource for the individuals of that group. He claims that social capital "inheres in the structure of relations between actors and among actors." Thus, social capital is not lodged in individuals themselves, although they can make use of it to facilitate the production of individual or collective ends. Coleman sees the existence of social capital in trust, information, norms and effective sanctions, authority relations, and the extent of obligations in a group. Each is a feature of the social structure that also provides social capital as a resource for the individuals of the group.[7]

[4] According to Schultz, the notion of human beings as capital appears in the work of several classical theorists, including Adam Smith.

[5] Woolcock (1998) provides an exceptionally extensive review of the use of social capital.

[6] Hanifan's (1920) early reference to social capital means that the concept, although forgotten for over 50 years, actually predates the notion of human capital. I thank Robert Putnam and Brad Clarke for pointing out this citation on SOCNET, the social networks listserv.

[7] Becker (1996) has recently expanded his treatment of human capital to include various other forms of capital such as personal capital, imagination capital, and social capital. He sees an individual's social capital as part of his total stock of human capital, where social capital is the relevant past actions by peers and others in an

Coleman (1988) uses an example of social capital that is extremely useful in understanding the concept.

> Wholesale diamond markets exhibit a property that to an outsider is remarkable. In the process of negotiating a sale, a merchant will hand over to another merchant a bag of stones for the latter to examine in private at his leisure, with no formal insurance that the latter will not substitute one or more inferior stones or a paste replica. The merchandise may be worth thousands, or hundreds of thousands, of dollars. Such free exchange of stones for inspection is important to the functioning of this market. In its absence, the market would operate in a much more cumbersome, much less efficient manner. (P. S98)

Coleman observes that within this wholesale diamond market, individuals have many close ties through family, community, and religious affiliation. There is an "extra layer" over their business transactions that allows trustworthiness to be taken for granted. This "social capital" allows for efficient economic transactions—the diamond merchants can avoid expensive bonding and insurance devices.

To concisely represent and summarize previous theoretical work on the subject, I suggest the following definition of social capital. Social capital involves two components:

1. *Objective associations between individuals.*—There must be an objective network structure linking individuals. This component indicates that individuals are tied to each other in social space.

2. *A subjective type of tie.*—The ties between individuals must be of a particular type—reciprocal, trusting, and involving positive emotion.[8]

When social capital is present, it increases the capacity for action and facilitates the production of some good. When active, it facilitates various ends for the members of a group and for the group as a whole. Social capital could, however, remain latent within the group and be viewed as potential energy.

The goods produced by social capital can occur at different levels of the social structure.[9] For example, we can imagine the production of an

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individual's social network that affect current or future utilities. This formulation is complementary to the one presented in Coleman and Bourdieu but stresses the importance of others' choices in the total amount of social capital available to any individual or group.

[8] This two-component definition of social capital reflects the traditional division in social theory between structure and content (Simmel 1971). Seen another way, social capital has both a quantitative and qualitative dimension.

[9] This point has not been recognized in previous research. Instead, researchers have argued that social capital at the level they consider is the only "real" social capital. However, social capital, as a general concept, can be measured at multiple levels, just as Becker (1964) or Schultz (1961) describe human capital at both the individual and aggregate level.

individual, private-level good—a mother asks a friend to baby-sit rather than hiring a baby-sitter. In this case, social capital is an individual, private good that, like human capital, can be used for economic gain or another private outcome such as educational attainment. Saunders and Nee (1996) use social capital in this way when they employ family-level variables and consider their effect on individual family self-employment. Other researchers consider the impact of migration (as a breakdown of social capital for an individual family) on an individual child's educational attainment (Hagan et al. 1996; Smith, Beaulieu, and Seraphine 1995). Social capital, as ties between individuals and the context of those ties, in this case produces an individual-level good—one person's ties produce a good that is used only by them. Of course, if a mother asks a friend to baby-sit, she is actually increasing the social capital between them, since she is incurring an obligation. The good produced in this single instance, however, remains primarily hers.

We can also consider the production of group-level goods. The diamond merchants provide an excellent example of this level—any of the merchants can draw upon the accumulated social capital of the whole group. Or, the social capital in such a group can benefit *all* members at the same time if they collectively pursue a public good. Individual and group-level social capital are linked. An individual may hold a number of obligations that can benefit him or her personally; at the same time, as part of a larger system of obligations, these obligations can contribute to the social capital of a group. To take an example from Portes and Sensenbrenner (1993), a Latino police officer fighting a court battle after shooting two black cyclists was able to use pleas for help on Hispanic radio stations to raise money. The tight ties and positive feelings in that community were used in his case to benefit a single individual. The social capital in that community could have benefited any individual member, however. Studies that consider the positive impact of ethnic subgroups on all their members are examples of the production of group-level goods (Zhou and Bankstron 1994). Or, consider how a family's commitment to education and commitment of other families in their school combine to determine the success of an individual child.[10]

[10] It is also useful to consider a case where the production of an individual-level good is tightly tied to an even more general level of social capital. Consider a game representing trust in a noncontract exchange situation, such as an illegal drug market (see Dasgupta 1988, pp. 61–63). In this situation, a buyer has the choice between trying to buy a high-quality drug (placing trust) and not trying to buy the drug (not placing trust). If the buyer chooses not to buy the drug, the game is over. If the buyer decides to buy, however, then the seller has a choice between giving a drug of high quality (keeping trust) or giving a drug of lower quality (breaking trust). The buyer would prefer to have the high-quality drug, but would also prefer to have no drug over receiving a poor-quality drug. In this game, population-level trust determines whether

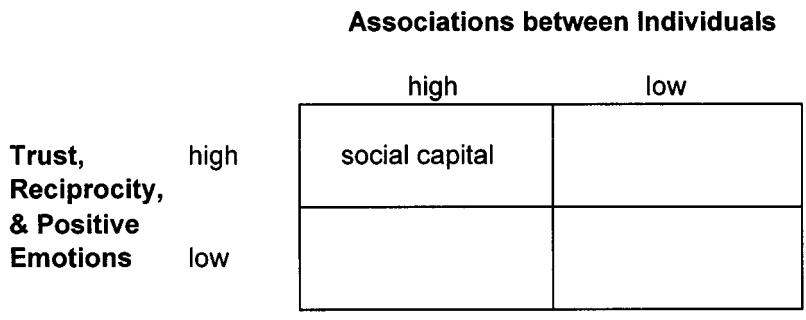

FIG. 1.—Social capital

Social capital can also be considered to produce goods at the community level (between many groups).[11] While some theories speak of social capital within a single group of individuals, like the diamond traders, other theories, such as Putnam (1995) or Fukuyama (1995), utilize social capital as a macrosociological phenomenon, or a feature of a community. In their theories, entire nations can hold differing levels of social capital, which in turn affect the chances for democracy or industrialization.

Social capital, as I have defined it, involves the mutual occurrence of two components, which in turn produces a capacity for action. Another way to view social capital is with a 2×2 table, as in figure 1.

Social capital exists in the top left corner of the table. Viewing social capital in terms of a 2×2 table is a useful explanatory device. For example, I can place the diamond market example within the 2×2 table. Figure 2 illustrates that it is only in the presence of both high associations and high trust that we see the economic efficiency gains from the trusting exchange of diamonds. Otherwise, it takes the addition of external agents

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the individuals will exchange. That is, if the buyer believes the trustworthiness of the average person is high, he or she will choose to make the exchange. If we restrict ourselves to the creation of trust between those two individuals in the absence of others, however, individual-level social capital cannot be an explanation (because social capital itself involves trust). Instead, to explain this exchange, the different levels of social capital become very important. Also, this example illustrates the temporal element to social capital. If social capital existed between the two individuals in a previous time point, then it could explain the creation or continuance of trust in the present time period, regardless of the population level of trust.

[11] A similar distinction between these three levels (individual, within-group, and between-group) is found in human capital research, where individuals personally hold human capital such as education or job training, yet researchers also discuss a company's attempt to raise levels of human capital, or review the overall level of human capital in the United States (e.g., Becker 1964, pp. 23–24).

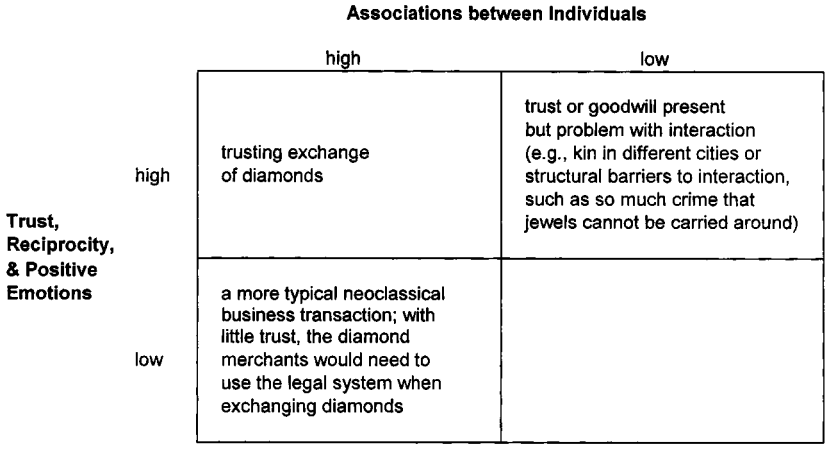

FIG. 2.—The diamond market example

for action to occur. In the high trust/low association cell, intermediaries in the form of go-betweens or transporters would be necessary for action. In the low trust/high association cell, a third party is needed to insure or enforce the transaction.

One major problem with previous theoretical work on social capital is that researchers have assumed that its effects will always be positive. However, acknowledging that social capital can exist at different levels can help us understand that social capital need not always imply positive effects for all members of a community. That is, social capital *within a single group* need not be positively related to social capital *at the community level.* While social capital within a particular group may be expected to have positive effects for the members *of that group,* this need not "spill over" into positive gains in social capital for the community. For example, a militia or ethnic separatist group might have high social capital within its individual group but reduce social capital in the larger community by either having no ties with others outside of the group or in reducing the overall level of trust in those outside of the group. Granovetter (1973) speculates on the importance of weak ties to community organization—in a similar manner, ties between groups could be necessary to increase community-level social capital.

Not only can social capital within a single group potentially reduce social capital between groups, but high within-group social capital could have *negative* effects for members of the community as a whole. That is, the potential energy created by an individual group could be used for nefarious purposes. To take an example from Gambetta (1988, p. 214),

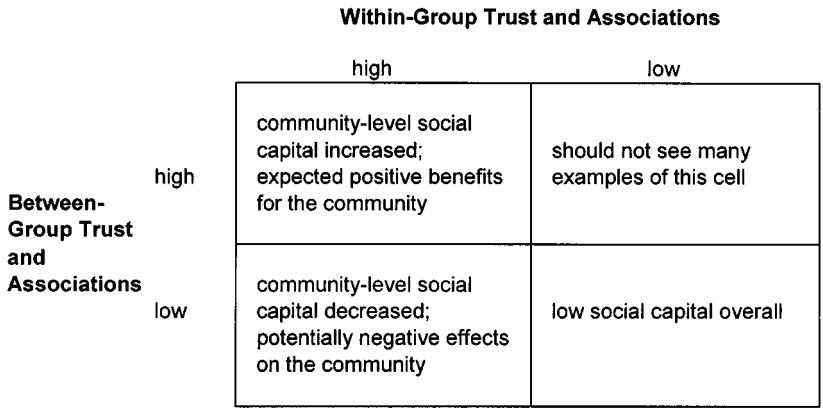

FIG. 3.—Community-level social capital

there are instances of high social capital, like those among robbers and murderers, that we would want to reduce for the sake of the community as a whole. This is a point that has been made in research on civil society (Nelson 1994, p. 150; Fatton 1995, p. 72) and trust (Gambetta 1988, p. 214) but is only recently acknowledged with regard to social capital (e.g., Portes and Sensenbrenner 1993; Portes 1998; Foley and Edwards 1997).

We would expect to see decreased social capital or negative effects at the level of the community when there is low between-group trust and networks but high within-group trust and networks. In this case, organized interest groups could effectively decrease trust within the entire community and possibly result in outcomes that do not benefit the community as a whole, or every member of the community.

Positive, community-level social capital would be expected to occur when there are positive, trusting ties between individuals in different groups (crosscutting ties). As before, this situation can be illustrated with a 2×2 table (see fig. 3).[12]

MORE ON SOCIAL CAPITAL: ITS COMPONENTS AND EFFECTS

By investigating the potential decline of social capital in the United States, this article considers aggregate, positive social capital (the top left-hand cell of fig. 3). In the preceding section, I illustrated that social capital involves two components: trust and associations. In this section, I consider

[12] I thank Jonathan Hartlyn for suggesting a 2×2 representation of this point.

each component in depth and discuss how it can be measured in an aggregate manner. I also illustrate, with an extended example, how aggregate measures of social capital can have aggregate-level effects.

Trust

The first component of social capital relates to the types of ties between individuals, where the presence of positive ties is essential. For the measurement of aggregated social capital, I focus on trust. An emphasis on trust, over other types of ties, is prevalent in the literature (e.g., Putnam 1995; Brehm and Rahn 1997), as it is difficult to measure positive emotions or the extent of reciprocity at the national level. Most theory is driven by discussions of trust, and trust is highly associated with generalized reciprocity, so trust remains a good proxy for positive, reciprocal ties in general.

Barber (1983, p. 165) defines trust as "socially learned and socially confirmed expectations that people have of each other, of the organizations and institutions in which they live, and of the natural and moral social orders, that set the fundamental understandings for their lives." Trust can occur in at least three levels of the social structure: in the isolated dyad, between individuals in the presence of third parties, and between an individual and a collection of individuals, such as an organization or an institution.

In measuring aggregate trust, I focus on perceptions of trustworthiness rather than the actual placement of trust. At aggregate levels, it is often not reasonable to consider the trustor as having full choice in the placement of trust. For example, as Luhmann (1979) explains, to not trust in its broadest sense would prevent an individual from rising in the morning. He calls this type of trust "confidence" (Luhmann 1988). Also, with many institutions, the trustor does not have any choice about whether to place trust. For example, it is illegal for a citizen to choose not to place trust in the U.S. government by not paying taxes. This does not mean, however, that individuals do not have an opinion about the trustworthiness of an institution.

Theorists make a distinction between trust in specific individuals and trust in more abstract people or systems (e.g., Giddens 1990). Abstract trust entails less awareness of risk (Luhmann 1988) and less awareness of the person being trusted. So, while actors can make very specific determinations of the trustworthiness of certain individuals (based on information about that individual's history, motivation, competence, etc.), they may also hold opinions about the trustworthiness of more generalized others. For example, individuals may have an opinion about the trustworthiness of the "average" person. In measuring aggregate trust, I focus on individu-

als' estimates of the trustworthiness of generalized others, or abstract trust. While trust in specific others may be important at more microlevels of social capital, generalized trust is the important feature of national-level social capital.[13]

Individuals can also hold opinions about the trustworthiness of abstract systems, such as institutions, which are aggregations of individuals embedded in particular social structures. Based on generalized estimates of the technical competence and moral obligations of individuals in an institution, as well as estimates of the sanctions inherent in the social structure of that institution, a person in the United States can develop institution-specific levels of trust. This is similar to Giddens's (1990) notion of trust in expert systems, where an actor may not know the person who built their car or their house, but they trust the system of accreditation, regulation, and monitoring in which the person is embedded. Previous assessments of social capital have concentrated only on trust in governmental institutions. This was mainly due to the conflation of social capital with its outcomes (civic engagement), however. Instead, trust in many aggregate institutions is necessary for an assessment of national-level social capital.

There are a few other types of trust that fall between trust in a specific individual and trust in generalized others or institutions. For example, when a potential trustor is embedded in a group, he or she may assign the other members of that group a level of trustworthiness that is higher than the trustworthiness accorded to the average person, due to the presence of norms and sanctions against those who break trust. In the same manner, a potential trustor might identify certain categorical groups in society to receive more or less trust than the average person. For example, many people in the United States hold notions of the typical criminal, which could cause them to trust young, black men less than other categorical groups (Reiman 1990). Or, some people in the United States may believe that groups such as lawyers or politicians have low feelings of moral obligation and consequently downrate their level of trustworthiness as an entire group. These distinctions between in-group and out-group trust are important for distinguishing between the creation of positive, community-level social capital and some alternative negative outcomes (i.e., figure 3).

Associations

The second component of social capital reflects the objective ties between individuals—their associations with each other. Associations between in-

[13] Dasgupta (1988) in a game-theoretic model of trust, discusses a population's reputation for honesty. In his model, while a potential trustee may be either honest or dishonest, a trustor makes use of the entire population's reputation for trustworthiness in making a decision whether to place trust.

dividuals fall into two types. Individuals can be informally connected to others through friendship choices and other types of network ties, or individuals can be connected to others through formal group memberships. First, individuals have relationships with other individuals. That is, individuals have a social network. Relationships (ties) can be of many different types, including friendship or other emotional ties; transfers of material resources, or exchange relationships; proximity in space, such as neighbors or office mates; and kinship relations (Wasserman and Faust 1994). They can also be directional or nondirectional, valued or dichotomous, and uniplex or multiplex (see Wasserman and Faust [1994, chaps. 1–2] for a discussion of network terminology). Each of these features of the association has implications for the total stock of social capital. At its base, however, is the argument that an individual's informal friendships with old schoolmates, fellow workers, or the friend of a friend can create social capital through increased communication, information diffusion, and social support.

Besides informal ties to others, individuals can be tied to other individuals through formal membership in voluntary associations (an association or affiliation tie). With association ties, individuals are linked through their joint presence at an association event, or through their joint membership in an association (Breiger 1974). To survive over time, voluntary associations must recruit and maintain members. This is one way to distinguish formal associations from informal networks: informal friendship networks are defined *by* the ties between individuals, but formal associations survive beyond any particular member or internal social network. In voluntary associations, in addition to the benefits of network ties, members access and create additional group-level benefits. It is this membership in *groups,* not simply the ties between individuals, that provides further resources to solve collective problems and pursue specific goals in a large society. Much theory and research has illustrated this potential in groups (e.g., Lipset, Trow, and Coleman 1956).

For small groups, the social network of individuals and all their group memberships can often be defined exactly through a complete enumeration of ties (e.g., Moody and Bearman 1997). Network characteristics, such as density and reach, on a variety of ties, such as obligations and friendships, could accurately reflect the structure of the overall network of individuals and their ties to groups for the measurement of social capital.

In larger groups like nations, a complete enumeration is impossible. In those cases, a random sample of the ties between individuals provides only an estimate of the density of the aggregate network.[14] National surveys ask

[14] This means that there is a high possibility of inaccurate measurement, which should be accounted for in our models. The model I will present does account for measure-

questions about the number and type of group memberships, which can be used to estimate the general level of associations through groups in the nation as a whole. In addition, more traditional network questions in national surveys allow an estimation of the ties between individuals at the larger level.[15]

It is also desirable to consider the ties between individuals across various groups (crosscutting ties). As discussed above, it is these types of ties that can translate into positive social capital for the community as a whole. Unfortunately, without a census of associations and the ties between them, it is difficult to measure these crosscutting ties at the national level. The best we can do is assume that when individuals have multiple association memberships, it indicates some connection between the associations through individuals (see Breiger 1974). It is essential to better measure and test connections between associations in future research.

Other Possible Components of Social Capital

Political participation and volunteering are not included in my model of social capital, although some have treated them as indicators (e.g., Putnam 1995; Ladd 1996; Wuthnow 1997). Social capital, as originally theorized, does not include specific actions of individuals, such as voting or volunteering—these are outcomes that we would expect to be *facilitated* by high levels of social capital. Once outcomes are separated from social capital, we can test whether declining levels of social capital have detrimental effects on other variables such as voting.

Efficiency and Productivity Gains at the Aggregate Level

By investigating the potential decline of social capital in the United States, this article considers aggregate-level social capital. The previous two sections illustrated how the two components of social capital can be measured in an aggregate manner. The final portion of my definition of social capital implies an increased capacity for action. At the aggregate level, this should imply aggregate-level gains in productivity or efficiency.

In general discussions, trust is described as a lubricant that eliminates the need for third-party insurers or enforcers. At the same time, group memberships, especially crosscutting ones, are expected to increase com-

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ment error, and I believe it is the first model of social capital to take measurement error into account.

[15] More complex sampling designs are also possible. For example, McPherson's (1982) hypernetwork sampling design links a representative sample of organizations to a representative sample of individuals.

munication and information flows. Both these effects of social capital, at the aggregate level, can increase efficiency and productivity in any number of aggregate outcomes. For example, Fukuyama (1995) outlines the benefits for national economic efficiency (see also, Granovetter 1985), Coleman (1988) focuses on reductions in high school dropout rates, and Putnam (1993) argues for increases in government efficiency. To illustrate the relationship between aggregate-level social capital and aggregate-level public goods, I will focus on the maintenance of democracy—an important aggregate-level public good and the one most often considered "in danger" by social capital researchers.[16] I provide one link between social capital and democracy for each component, although others are possible. A more extensive discussion of the relationship between democracy and social capital can be found in Paxton (1998).

Consider high national levels of trust in generalized, or random, others. Such trust is extremely important in a democratic system because individuals must be willing to place political power in the hands of "the people." With low levels of observed trust, individual citizens would be unwilling to relinquish political power to those with opposing viewpoints, even for a short time.[17] In democracies, there must be competition between groups, and power can shift from one group to another. Without trust, individuals would not believe that others would follow the "rules of the game" while holding power, and so would be unwilling to give up power themselves, even for a short period. A lack of trust could therefore seriously undermine the continuance of democracy, because there would be no way to successfully maneuver turnovers of power.[18] High aggregate levels of trust, on the other hand, would help ensure efficient, regular turnovers of power. Without protracted succession battles, the health of a democracy and its ability to productively address national issues are enhanced.

As for the other component of social capital, associations, the overall connectedness of a population increases information flows. Increased information flows aid in the maintenance of democracy by ensuring that political participation is tolerant, moderate, and publicly oriented. Tocqueville (1990) argued that as individuals participate in associations,

[16] Transitions to democracy require separate arguments, see Paxton (1998).

[17] Trust in one's particular group, or only a segment of the population, would be inadequate. In a pluralist system, individuals must display *generalized* trust, since at any time, any group could obtain power.

[18] Trust in institutions is also important for the maintenance of democracy through its relationship to democratic legitimacy. Even if individuals have low generalized trust in individuals, they may trust "the system" enough to allow politically objectionable groups to hold power for a time. However, some level of trust in individuals is still necessary to believe that others will uphold the system. Democratic legitimacy is discussed extensively elsewhere (e.g., Lipset and Schneider 1983; Lehman 1987).

they see others who are also participating in associations and notice that their interests coincide at a greater level. This learned similarity causes an individual to develop an "enlightened self-interest," which moves beyond individual self-interest to a consideration of the public good, the promotion of a common identity, and a sense of shared responsibility. In addition, with more aggregate-level association memberships, new ideas and opinions are more quickly disseminated throughout the population, yet, extremist ideas are more easily challenged, as they have less chance of remaining isolated. An "enlightened self-interest" and the checks on extremist ideas mean that individuals should have a wider interest in mind when participating in politics, thereby changing the type (i.e., more tolerant, moderate, etc.) of their democratic participation.

Empirical evidence supports the view that social capital is related to the maintenance of democracy. First, a massive amount of research (e.g., Verba, Schlozman, and Brady 1995; Verba, Nie, and Kim 1978; Wolfinger and Rosenstone 1980) has shown that membership in voluntary associations stimulates political participation. A related line of research illustrates that ties to the community increase the chances of individual political participation as well (e.g., Guest and Orpesa 1986). Although there is some debate on the issue, many see extensive political participation as essential for the health of a democracy (Mill [1831] 1975; Tocqueville 1990; Arendt 1948). Second, Putnam's (1993) research in Italy considered the relationship between social capital and democratic governmental performance. He found a measure of "civic community" (which included association memberships) to be highly correlated with democratic institutional performance ($r = 0.92$). (He also noted that the correlation remained significant with a control for economic development.) Third, a cross-national analysis of democracy and social capital reveals a similar positive relationship (Paxton 1998). The correlation coefficient between measures of trust and democracy across 45 countries is $r = 0.44$ ($p < .003$),[19] and remains if industrialization is controlled (partial $r = 0.42$ [$p < .005$]). And, the partial correlation (controlling for industrialization) between democracy and a count of international nongovernmental organizations in over 150 countries is 0.35 ($p < .0001$).[20]

[19] I report the correlation with two extreme outliers (China and Nigeria) removed from the sample.

[20] While I have focused on only one outcome, similar arguments could be presented for other public goods. The lubrication, predictability, connectedness, and communication that come from high levels of social capital increase efficiency in economic transactions, scientific endeavors, and the political process. To briefly outline another example, Becker (1964) explains how increases in human capital aid economic development through the growth of scientific and technical knowledge (which raises the productivity of labor and other production inputs). In a similar manner, increased associations and trust would help quickly disseminate technical or scientific knowl-

To recapitulate, both components of social capital, trust and associations, can be measured at the aggregate level. Individuals can make assessments of the trustworthiness of generalized others, as well as people associated with specific national institutions. Individuals can have objective ties to others through their membership in voluntary associations or outside of such groups, in their ties to neighbors or friends. At the national level, high levels of trust and association memberships should enhance public goods such as the maintenance of a healthy democracy.[21] In the next section, I propose a model of social capital that reflects both components of social capital at the national level.

MODEL

Assessing a possible decline in social capital requires a model of social capital that incorporates multiple indicators over time. I use data from the *General Social Surveys* (Davis and Smith 1994), or *GSS,* because it contains multiple indicators for both components of social capital over a 20-year period (1975–94). Specifically, my model of social capital, consisting of 12 indicators and three latent variables, is available for nine years: 1975, 1978, 1983, 1986, 1988, 1990, 1991, 1993, and 1994, where each year samples a different set of individuals.

To conform to my theoretical model, I separate the measurement of social capital into two pieces. One component of the model measures an individual's subjective trust toward others in the community. The second component measures the objective extent of an individual's associations, or ties to the community. For ease in the presentation of my model and the results, I separate the two components and discuss each in turn.[22] In a later section, I explore the combination of trust and associations as a measure of social capital.

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edge. (The importance of associations for this purpose is obvious. See Hardwig [1991] for a discussion of the importance of trust in science.) While much technical or scientific dissemination would take place through professional associations, the spread of knowledge about the Internet illustrates that more general voluntary associations or neighborhood/friendship ties play an important role as well.

[21] Although I spend little time discussing other types of capital, all the types of capital are complementary in their returns on efficiency. For example, human capital and social capital can magnify each other's effects. Human capital can complement social capital: a group can make use of the knowledge base of its members when attempting to achieve a collective good. Or, social capital can complement human capital: ties to other skilled individuals can augment an individual's own human capital.

[22] It is not necessary to provide a hypothesis about the effect of one component on the other during measurement. Others have hypothesized some effects (e.g., Brehm and Rahn 1997), but the incorporation of such effects is unnecessary in the present analysis.

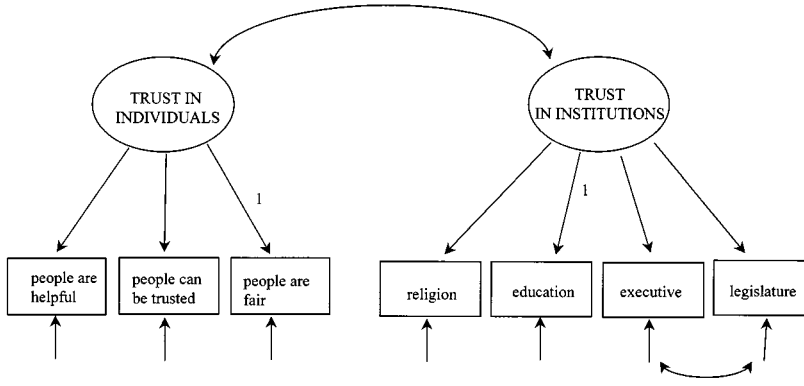

FIG. 4.—Model of the trust component of social capital

Trust

Figure 4 presents my model of the first component of social capital—trust.[23] I model trust as a confirmatory factor analysis with two dimensions: an individual's general trust in others, and an individual's trust in institutions.[24] The first dimension, trust in individuals, has three dichotomous observed indicators: "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?" (HELPFUL), "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?" (FAIR), and "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" (TRUST). These questions were first formulated by Rosenberg (1956). Although only one of the variables uses the word "trust," all three reflect the trustworthiness or integrity

[23] Path diagrams like fig. 4 represent relations between observed (measured) and unobserved (latent) variables. Latent variables are enclosed in ovals, while observed variables are represented with boxes. Straight arrows indicate a causal relationship between two variables, while curved two-headed arrows indicate a covariance between two variables that is unexplained in the model. Measurement error is indicated by δ's, and errors in equations are indicated by ζ's. Allowing measurement error acknowledges that the variables are not perfect measures of their underlying concepts. Also, having multiple measures of the same latent variable means that more information is available about the concept of interest.

[24] To measure the distribution of general trust across the United States, we would also want to measure the differential trust assigned to various groups. However, measures of differential group trustworthiness rarely exist in social surveys (a notable exception is the PEW Research Center study on Philadelphia). The *GSS* does not contain questions related to trust of different groups, so future research should consider this as well.

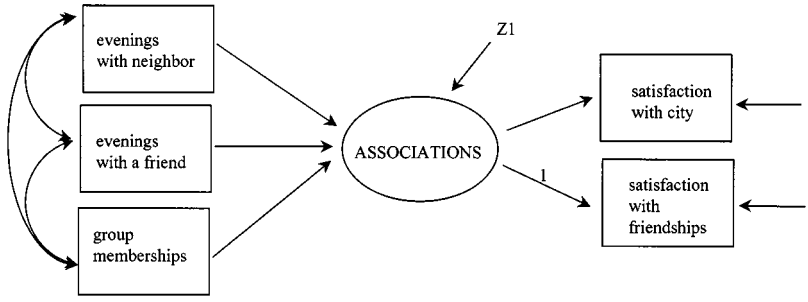

FIG. 5.—Model of the associations component of social capital

of others. Each question queries about feelings of moral obligation, which Barber (1983) theorizes as essential to trust. I model the three questions so that an increase in an individual's feelings about the trustworthiness or moral obligation of others is expected to simultaneously increase answers to all three *GSS* questions.

Trust in institutions considers three general institutions: organized religion (RELIGION); the education system (EDUCATION); and the government, where the government is broken into the executive branch (EXECUTIVE) of the federal government and the Congress (LEGISLATURE). Each of these variables is created from this question: "I am going to name some institutions in this country. As far as the people running those institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?"[25] While others have referred to these questions as "confidence in institutions," I refer them as "trust" in institutions to emphasize that they represent just another dimension of overall trust.[26]

Associations

Figure 5 presents my model of individuals' associations, which is different from a typical confirmatory factor analysis. In this model, I expect three

[25] I do not include trust in other institutions such as the military, medicine, and banks, even though the *GSS* asks about them. In deciding which of the 13 available institutions to include, I attempted to choose those that would provide the best information about generalized trust in institutions. To pick the institutions with the most relevance to individuals, I used those that most often had chapters devoted to them in a sample of introductory sociology textbooks.

[26] Such a strategy is supported by the 1978 *GSS,* which asked respondents what the word "confidence" meant to them. Smith (1981, p. 169) reports, "The overall favorite choice was that confidence in the people running institutions means trusting them. Almost 35% mentioned trust in their responses." Other often-mentioned responses were "capability," "believe in," and "faith."

indicators to increase an individual's unobserved level of association: how often a respondent spends a social evening with someone in their neighborhood (EVENINGS WITH NEIGHBOR), how often a respondent spends an evening with friends who live outside the neighborhood (EVENINGS WITH A FRIEND), and the total number of memberships the individual has in voluntary organizations (GROUP MEMBERSHIPS). Together, these three variables measure the objective extent of an individual's associations in the community, both associations with other individuals and associations through groups. As each of these variables increases, I expect an individual's general level of association to increase. So, I place the variables as *causes* of a general level of association, rather than as *effects,* as would be the case in a typical confirmatory factor analysis.

In turn, I expect two indicators to be influenced by an increase in an individual's general level of association: the amount of satisfaction a respondent receives from the city or place in which they live (SATISFACTION WITH CITY), and the satisfaction the respondent receives from friendships (SATISFACTION WITH FRIENDSHIPS).[27] Many studies have linked social support to happiness (see Argyle 1992). So, individuals who are more embedded in their community, through their ties to others or their memberships in groups, are expected to rate their satisfaction with city and friends higher. These two variables are measured on a seven-point scale ranging from no satisfaction to a very great deal.

RESULTS

There are a number of steps to estimating the possible decline of social capital in the United States. (1) Since there are many possible specifications of social capital, I must estimate both components of social capital and establish that my model of social capital fits the data well in every year. (2) Once I have illustrated that my model fits the data well, then I must demonstrate that the relationship between the general level of social capital and my observed measures remains stable over the 20-year period. As noted above, by charting means over time, others have made the assumption that the relationship between the indicators and the latent variable of social capital has not changed over time. This need not be true, and if the relationship has changed over time, we could see a decline in

[27] Similar questions were asked about family interaction and satisfaction. I do not use those variables in the model, however, as family interaction is widely seen as qualitatively different than community interaction. In fact, some scholars have posited that excessive family interaction is detrimental to community-level interaction (e.g., Banfield 1958).

a measure of social capital *even if* there was no change in the latent level of social capital over the time period. I must therefore establish that my model's parameters have remained stable over time or I cannot say anything about a change in general social capital.[28] (3) Once I have established that my model fits well and that its parameters are stable over time, I can finally move to the question of a decline in social capital. In doing so, I consider both linear and nonlinear trends.[29]

The Fit of the Model in Each of the Nine Years

The first question I must answer in analyzing the data is whether my model fits the data well in every year. Fit statistics for both components of the model in each year appear in table 1. I provide fit statistics from various families (Tanaka 1993), which together give a comprehensive view of how closely the model represents the data in each year. The top half of table 1 indicates that the trust component of the model fits well in each year. The only indication of a poor fit is the significant chi-square test statistic in four of the nine years. However, the chi-square test is sensitive to sample size and the distribution of the observed variables. Because the chi-square test is a measure of "perfect" fit, any slight deviation from a perfect fit could induce a significant test, especially if the model has a great deal of power (e.g., the sample size is large). Other fit statistics are less sensitive to sample sizes, and these, the root mean square error of approximation (RMSEA) (Steiger and Lind 1980) and incremental fit index (IFI) (Bollen 1989*b*), indicate an excellent fit in each year. The ad-

[28] This section serves two additional purposes. First, by testing whether the parameters of the model remain stable over time, I can test for a change in the variance (or dispersion) of social capital over time. Second, once I provide evidence that my parameters are stable over time, I can pool the years together. One cannot pool data sets without first establishing that the parameters across the groups are the same.

[29] In analyzing the data, each component of the model required different corrective procedures. The trust component of the model includes categorical endogenous variables (dichotomies and trichotomies), so I used PRELIS to calculate the polychoric correlation matrix, which was then estimated in LISREL with weighted least squares (Jöreskog and Sörbom 1993). The polychoric correlation matrix is an estimate of the correlation between the two continuous variables that underlie the categorical variables, based on an assumption of normality. Used in conjunction with the asymptotic covariance matrix, this procedure produces consistent estimates of the parameters and unbiased standard errors. The associations component of the model had a large number of missing values. To take advantage of cases with incomplete data, I performed a maximum-likelihood estimation of the model with missing values in AMOS (Arbuckle 1995). In addition, I estimated the associations component with listwise deletion of missing values so that the results could be compared for extreme discrepancies.

TABLE 1

THE FIT OF THE MODELS OF TRUST AND ASSOCIATIONS IN EACH YEAR

Year	*N*	χ^2	*df*	*p*-value	AGFI	RMSEA	IFI
Trust:							
1975	1,150	20.75	12	.054	.99	.025	.99
1978	1,245	18.2	12	.11	.99	.02	1
1983	660	18.44	12	.1	.99	.029	.99
1986	1,251	23.2	12	.026	.99	.027	.99
1988	813	15.88	12	.197	.99	.02	.99
1990	722	26.66	12	.009	.98	.04	.98
1991	824	18.47	12	.1	.99	.026	.99
1993	850	38.58	12	.0001	.98	.05	.96
1994	1,633	21.76	12	.04	.99	.022	.99
Associations:							
1975	1,490	19.74	2	.00005	.96	.077	.95
1978	1,532	24.65	2	.0006	.95	.086	.93
1983	1,599	15.97	2	.004	.97	.066	.96
1986	1,469	8.36	2	.015	.98	.047	.98
1988	1,480	3.83	2	.147	.97	.025	.99
1990	1,369	5.105	2	.078	.97	.034	.98
1991	1,514	4.086	2	.13	.97	.026	.99
1993	1,602	9.058	2	.011	.98	.047	.97
1994	2,213	9.647	4	.047	.94	.025	.96

NOTE.—Trust model results are figured with listwise polychorics (PRELIS/LISREL); association model results are figured with MLE missing values (AMOS).

justed goodness-of-fit index (AGFI) (Jöreskog and Sörbom 1986) also indicates an excellent fit.[30]

The associations component of the model also illustrates a good fit in each year.[31] Although the chi-square test statistic is significant in the earlier years, this could be a function of the larger sample size for cases with complete data in those years. In this component of the model, the RMSEA is occasionally a bit high, although still within acceptable range (Browne and Cudeck 1993, p. 144). The other two measures of fit indicate a good

[30] The closer the AGFI and the IFI are to 1.0, the better the fit of a model. In contrast, the closer the RMSEA to 0, the better the fit of the model.

[31] The AGFI fit statistic is not available in the AMOS missing value routine, so I present the AGFI from the listwise deleted missing value estimation in CALIS. The sample sizes for the listwise deleted estimation are (1975–94): 1474, 1511, 1581, 1444, 497, 452, 520, 526, and 266.

to excellent fit in all years.[32] Therefore, the measurement models for trust and associations are consistent with the data.

The Stability of the Parameter Values over the Time Period

As discussed above, the next step is to test whether the parameters of the model (the factor loadings, structural parameters, variance of the latent variables, and the variance of the errors) remain the same over time. If they do not change, then I can track the level of social capital over time. Otherwise, any estimated change in the level of a latent variable could be due to a difference in parameter values across time (see Bollen [1989*a,* pp. 355–60] for further discussion of this issue). In addition, it is necessary to illustrate that each year (group) has the same parameter values if I wish to pool the samples (which I will do in the last section).

I can test the hypothesis that the parameters are the same in every year through a hierarchy of invariance, where parameters are constrained in an ordered sequence and compared to the unrestricted model. If the different years have similar parameter values, then there should be no significant difference in fit between the unrestricted model and the restricted models. In addition, the restricted models are nested within the unrestricted models, so a chi-square difference test provides a test of significance. Other fit statistics can also be checked for a serious decline in fit across the models.

For the trust component of the model, the parameters of interest are contained in the factor loadings, the variances and covariances of the latent variables, and the variances and covariances of the measurement errors. Therefore, I form the following hierarchy of models: the model with no restrictions on the values of the free parameters across time periods, the model with the factor loadings restricted across time, the model with both the factor loadings and the variance/covariance matrix of the latent variables restricted, and the model with all parameters restricted. The top half of table 2 indicates that there is no significant decline in fit when moving from the less restricted to the more restricted forms of the model.[33]

[32] I encountered some problems in the estimation of 1994. To achieve convergence, I had to constrain the variances of the measurement errors to those estimated in a multiple group analysis of the years 1975–93.

[33] The chi-square test statistics in the multiple group designs are all significant. This reflects the large sample sizes that result from combining all the years. The chi-square differences are not significant, however.

TABLE 2

HIERARCHY OF INVARIANCE FOR TWO COMPONENTS OF MODEL

Model	χ^2	*df*	*p*-value	IFI	RMSEA	χ^2 Difference	*df*	*p*-value
Trust:								
No constraints	201.9	108	1E-07	.98	.025			
Factor loadings constrained	252.1	148	2E-07	.97	.023	50.177	40	.13
Factor loadings, variance/covariance of latent vars. constrained	287.5	172	8E-08	.97	.022	35.361	24	.063
Factor loadings, var./cov. of latent vars., var./cov. of errors constrained	317.2	236	.0003	.97	.016	29.732	64	1
Associations:								
No constraints	100	20	1.26E-12	.97	.050			
Factor loadings constrained	111	26	1.78E-12	.96	.045	11	6	.0884
Factor loadings and structural paths constrained	133	50	1.83E-09	.96	.032	22	24	.5793
Factor loadings, structural paths, and var./cov. of error in equation constrained	138	58	1.81E-08	.96	.029	5	8	.7576
Factor loadings, structural paths, and all errors constrained	180	74	8.18E-11	.95	.030	42	16	.0004

The chi-square difference test is not significant, and the other fit statistics show no decline in fit.[34]

In determining whether the parameters of the associations component remain stable, we face different parameters of interest. There, I consider the following hierarchy of invariance: the model with no restrictions on the values of the free parameters across time periods; the model with the factor loadings restricted across time; the model with both the factor loadings and the structural paths from the exogenous variables to the latent variable restricted; the model with the factor loadings, structural paths, and the variance of the error in the latent variable equation restricted; and the model with all the above and the variances and covariances of the measurement errors constrained across time. The bottom half of table 2 indicates that the parameters remain stable in the association component of the model. There is no significant decline in fit between any of the first four models. When the variances and covariances of the measurement errors are constrained across the years, there is a significant decline in the chi-square but the other fit indexes indicate no substantial decline in fit.

These results establish that there is no significant change in the parameters of the model over time. This means that it is safe to test for changes in the level of social capital over time, because the relationship between the general level of social capital and its indicators has remained stable over the 20-year period. The evidence for stable parameters also means that I can pool all the years together (one should not pool samples unless it is established that their parameters are the same), and use a pooled sample in my over-time tests.

Also contained within the hierarchy of invariance tables is the test for a change in dispersion. The fact that the variances of the latent variables have not changed over time indicates that there has been no change in the dispersion (variance) of social capital over time. Thus, although the mean level of social capital may show a decline over time, there is no evidence that it is becoming more unequal in its distribution. (An unequal distribution would mean that any change in the level of social capital was combined with increased inequality, indicating that some segments of the population are retaining or increasing their levels of social capital, while

[34] Again, because the endogenous variables were categorical, I analyzed the polychoric correlation matrix. As an additional check, I also estimated the trust component of the model with the AMOS maximum-likelihood missing value routine. There however, the chi-square statistic was significantly different between some of the models. The significance is almost certainly due to the power of the test, however, as the sample size of the multiple group test is over 12,000. This hypothesis was backed up in tests that showed the power to detect a number of standardized 0.1 changes to be 75%. The incremental fit index and the RMSEA, which are not affected by sample size, indicate no decline in fit.

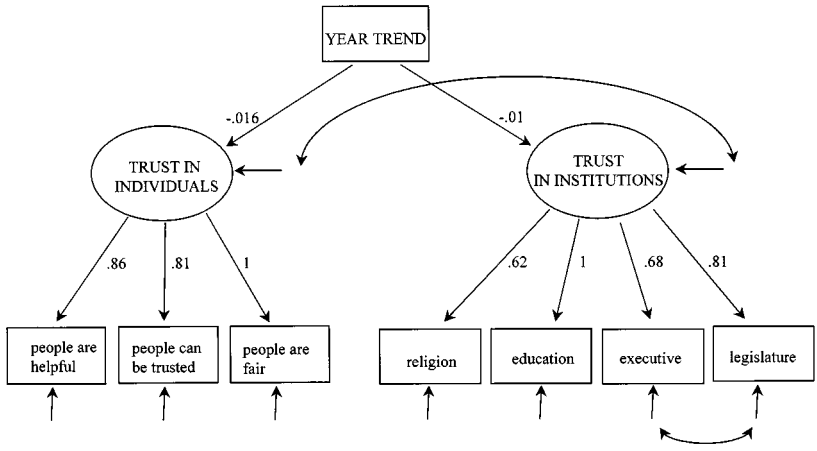

FIG. 6.—Model and estimated parameters for trust. All displayed coefficients are significant. $N = 9{,}148$; $\chi^2 = 343$; $df = 17$; p-value = 0; RMSEA = .05; IFI = 1.0.

others are decreasing in theirs. Since we do not see a change in the distribution of social capital over time, any decline in social capital we find is not accompanied by a concurrent increase in inequality.)

Testing for a Decline in Social Capital

Having established that the model fits well in each year and that the estimated parameters remain stable over the time period, I can now estimate change in the level of social capital over time. The *GSS* samples a different set of individuals every year so I do not employ a traditional longitudinal design. Instead, I treat each year as a different "group" and consider change over time in social capital through a modification of a multiple group design. As outlined in Muthén (1989), differences in levels between groups can be estimated by pooling all of the groups and including exogenous dummy variables to distinguish between them. My ability to pool the years was established in the previous section. In this section, I pool all of the years and include a trend variable (YEAR TREND), which tracks the year of the observations beginning at 1 in 1975 and ending at 20 in 1994 (there are 19 years between 1975 and 1994).

Figures 6 and 7 present some of the relevant parameter estimates for the pooled sample with the yearly trend exogenous variable (YEAR TREND). Beginning with the trust component of the model: the negative, significant values from the trend variable to the two latent variables indi-

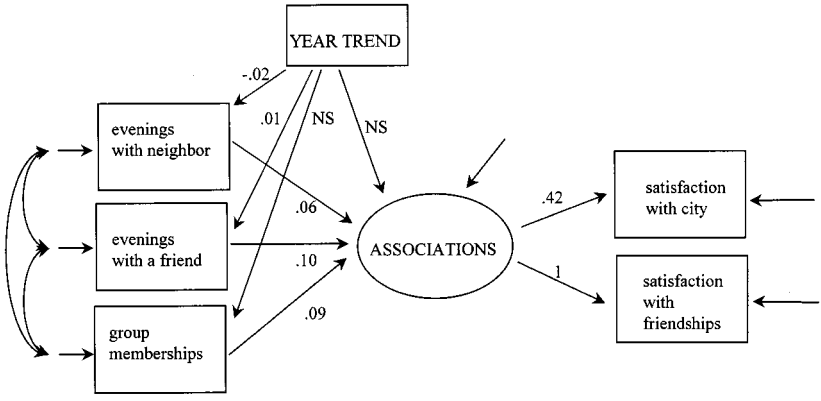

FIG. 7.—Estimated parameters of interest for associations. All displayed coefficients are significant. NS indicates a nonsignificant estimated parameter. N = 14,268; χ^2 = 94; df = 3; p-value = 0; RMSEA = .05; IFI = .96.

cate a negative trend over time. But we need to determine the actual effect size of these parameters. They are somewhat difficult to interpret because the coefficients come from a conditional polychoric analysis.[35] One way to interpret the effect size is to translate the coefficients into the change in the predicted probabilities of the observed variables (like in a probit analysis). These probabilities are provided as a chart over time in figures 8 and 9. For example, the change in the scaling indicator for trust in individuals over the 20-year period, when retransformed into percentages, is over 10% (from 0.49 to 0.37) or approximately a 0.5% drop per year. The indicators of trust in institutions, although also decreasing over time, are declining at a less rapid pace.

Things are quite different in the associations component of the model (figure 7). First, despite a very large pooled sample size, there is *no* significant change in the general level of association over time. I also assessed the impact of time on the three indicators that I expect to affect general levels of association. There is no change in individuals' memberships over time. There is a statistically significant 0.01 unit increase in the amount of time respondents claim they spend with friends outside their neighbor-

[35] For this component, since the trend variable is exogenous, I was able to compute the polychoric correlations conditional on YEAR TREND (Jöreskog and Sörbom 1993, p. 180). Using that and the estimated variances of the variables provides LISREL with the covariance matrix for estimation rather than the polychoric correlation matrix. Thus, my parameter estimates are not standardized, as in a typical polychoric correlation analysis, but are unstandardized estimates of effects.

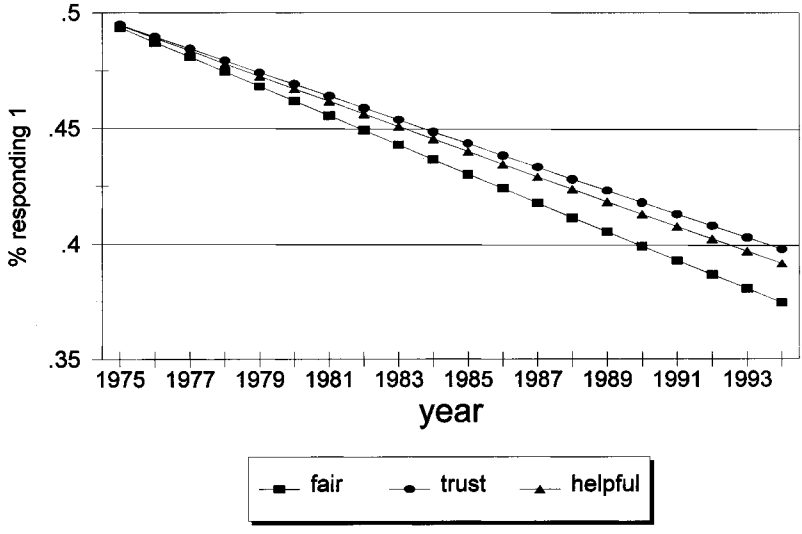

FIG. 8.—Predicted probabilities: trust in individuals

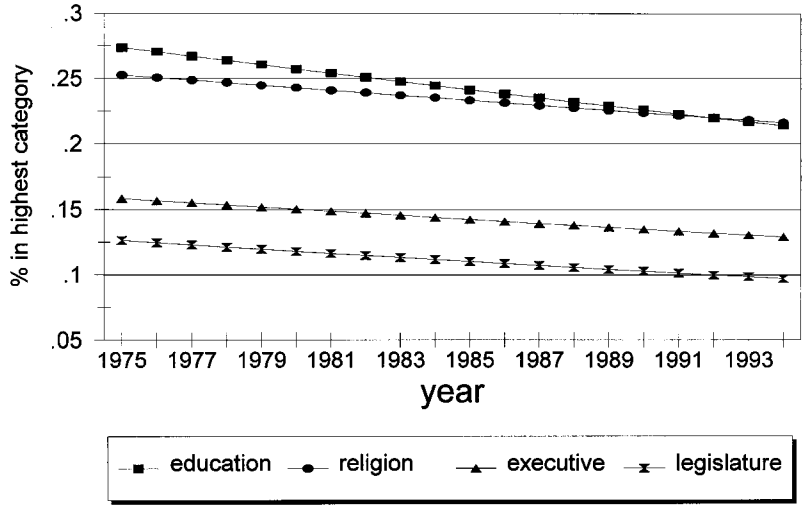

FIG. 9.—Predicted probabilities: trust in institutions

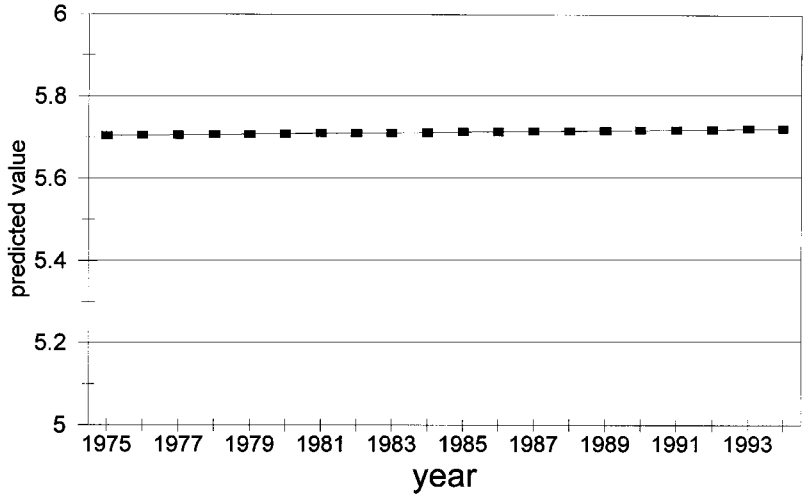

FIG. 10.—Predicted value: latent associations

hood and a 0.02 unit decrease in the time they claim to spend with neighbors. The actual effect size is extremely small, however. The range of the two variables is from one to seven, so the decline, while statistically significant, is not practically significant. To further illustrate the lack of change over time, in figure 10, I provide the predicted value of the unobserved latent variable as a chart over time. The chart indicates that, clearly, the latent level of association has not changed over time.

To briefly review, the analysis of change in social capital has shown a decline in trust and no change in associations. There are two other issues that must be considered, however, before moving to an analysis of general social capital. First, measuring time as a single trend variable assumes that time has a linear effect on the latent variables. To relax that assumption, I can utilize a series of dummy variables to represent individual years. If the dummy variables are coded to represent their year in the trend rather than the typical 0/1 coding (e.g., 0/0, 0/3, 0/8 rather than 0/0, 0/1, 0/1), then they can be used to test for nonlinear trends.[36] A significant chi-square difference between the restricted and unrestricted models means that a nonlinear trend is present.

[36] A restricted version of the model with multiple dummy variables, where all the estimated coefficients for the dummy variables are restricted to be the same, will produce the same results as a model with a single trend variable. When the constraints on the estimation of the coefficients are relaxed, however, the model allows nonlinear effects.

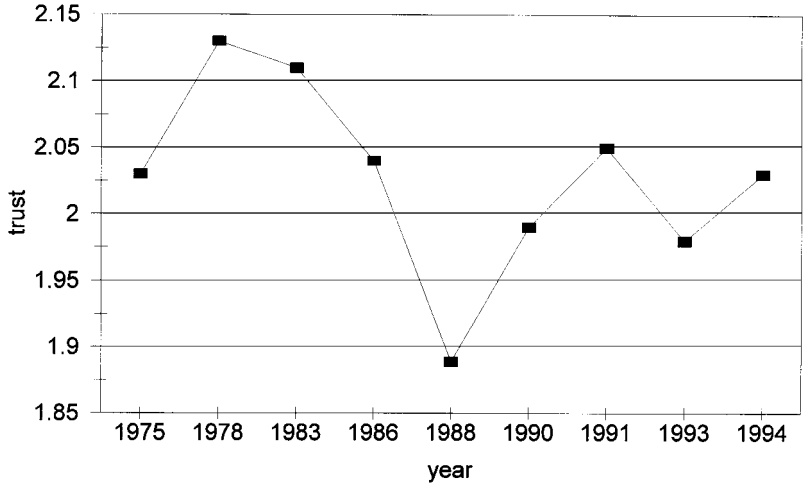

FIG. 11.—Trust in religion: 1975–94

Both components of social capital, trust and associations, do show evidence of a nonlinear trend. The chi-square difference test between the model with constrained dummy variable coefficients and free coefficients is 250 with 14 degrees of freedom for the trust component of the model. The chi-square difference test for the associations component is 49 with 28 degrees of freedom. Both tests indicate a significant improvement in fit when the dummy variables are allowed to estimate a nonlinear trend.[37]

A second issue that needs to be addressed is whether trust in specific institutions could be affected by yearly events, as well as over-time changes in general trust.[38] That is, scandals in a particular year, related to a particular institution, could drive responses about trust in that institution in that year. For example, consider the chart of the mean of trust in organized religion over time (fig. 11). The trend is dominated by the decline in trust in 1988, which is the year immediately following the Jim

[37] The trends for trust in individuals and institutions are discussed in more detail below. The trends for association memberships indicate that the general level of association does not really change over the time period, and neither does number of group memberships. The other two indicators show opposite trends. Neither shows any decline in the earliest years, but after 1988, spending an evening with a community friend steadily declines. Spending an evening with a noncommunity friend actually increases in the last few years.

[38] This is comparable to Smith's (1997) research, which illustrates that individual life events, such as criminal victimization, can influence people's responses to trust in individuals.

Baker (television evangelist) and related religious scandals. Another example of a potentially important scandal is Watergate, which could influence individuals' responses about trust in government institutions.[39] To assess these types of effects, I can use multiple dummy variables and allow the intercepts of indicators to be influenced by particular years (Muthén 1989). So, I can model a specific yearly effect by including a path from the dummy variable for a specific year directly to trust in a particular institution.

The first step in such an analysis is to identify scandals that are potentially relevant to the four institutions in my model. To determine significant scandal events surrounding the institutions of my model, I considered the *World Almanac and Book of Facts* (1975–94) list of top news stories for each year. The *GSS* is conducted in February, March, and April of every year, so I used the top news stories for the previous year in determining the potential exogenous effect of a particular year on any given institution. The *World Almanac* suggested four paths. The first, from 1988 to trust in religious organizations, reflects the Jim Baker and related religious scandals of 1987. Another path, from 1988 to the executive branch of the government, reflects the Iran-Contra affair. Finally, two paths, from 1978 to the legislature and the executive, reflect possible lingering effects of the Watergate scandal (1975 was not used because it is the omitted dummy category). Figure 12 graphically represents how I test for a nonlinear trend and the effects of scandals in the trust component of the model. I include a series of dummy variables for the test of nonlinear effects (eight variables representing the nine years for which I have data, minus the omitted year, 1975) and the specific yearly effects included to account for scandals (from a specific year, say 1988, to a specific institution, say religion).

Of the specific yearly events included in the model, all are significant except the path from 1978 to trust in the legislature. More important, once the paths related to scandals in particular years are included, there is no longer a consistent downward trend in the general (latent) level of trust in institutions over the time period. Instead, there is first increasing trust in institutions over the time period and then decreasing trust.[40] Therefore, when shocks to trust in institutions related to specific events are allowed

[39] For more information, see Smith (1994), who outlines the distinction between slow, over-time opinion change and event-driven change. One of his examples is the televangelist scandal of 1988. Most change is slow and consistent—it is this opinion change that we want to distinguish from sharp, event-driven changes.

[40] Without the scandal years in the model, trust in individuals has a general downward trend, while trust in institutions shows little change across most of the time period, with declines toward the end. After scandal years are included, general trust in institutions actually increases slightly over the time period, with large decreases in the later years.

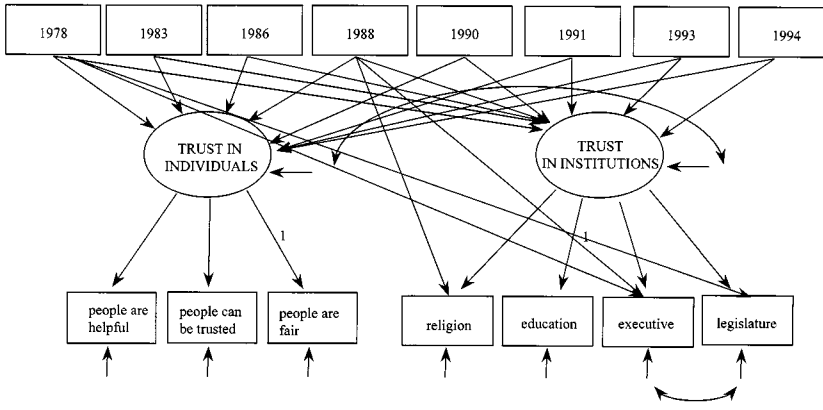

FIG. 12.—Model to test for nonlinear and scandal effects

in the model, there remains no separate general decline in trust in institutions.[41]

The above analyses consider the two components of social capital separately. The definition of social capital I presented earlier, however, describes social capital as the *combination* of trust and associations. I must therefore also track social capital, as a combination of both components, and check for a decline over time. There are a number of strategies for combining trust and associations, so to be more comprehensive, I present two alternative measures. First, I multiply the means of the relevant latent variables, providing a picture of their combined movement over time. Second, I track the percentage of individuals who both trust and associate at high levels.

For the trust component of the model, determining the mean of a latent variable (either trust in individuals or trust in institutions) in any year, κ_{it}, is straightforward—it is the mean of its scaling indicator for that year. However, because the associations model is not a traditional confirmatory factor analysis, the mean of latent associations is more complicated to calculate. There, in each year, the formula is:

$$E(\eta) = (\alpha + \Gamma\mu_x),$$

[41] The asymptotic covariance (weight) matrix for the trust component of the model with multiple dummy variables was nonpositive definite. Therefore, that portion of the analysis could not be estimated in LISREL with the conditional correlation matrix, as before. Instead, I estimated it in AMOS under the assumption that the indicators are continuous.

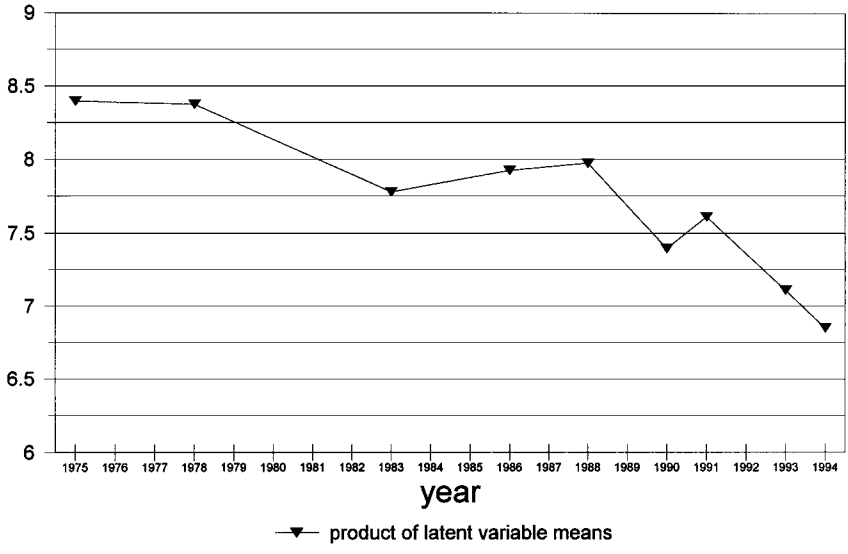

FIG. 13.—Latent social capital over time

where $E(\eta)$ is the mean of the latent association variable, α is the intercept of the latent variable, Γ is the vector of coefficients representing the impact of the exogenous x's on the latent variable, and μ_χ is the means of the exogenous x's. For each year, I estimated the means of the latent variables (latent trust in individuals, latent trust in institutions, and latent associations), and the line in figure 13 presents their product, tracked over time. It shows a slight decline over the time period, from 8.4 to 6.9.

As an additional measure, at the individual level, we can determine what percentage of the population displays both trust and associations over time. I selected individuals who responded "yes" to all three questions about trust, had at least "some" confidence in all four institutions, and belonged to at least one group. The line in figure 14 displays these percentages over time. It shows a sharper decline in social capital over time, from about 15% to 9%. As illustrated by the analyses of the two components separately, the downward trend in social capital is closely related to declines in the trust component. Over time, neither the mean of latent associations nor the percentage of individuals belonging to at least one association shows a decline. As the combination of both trust and associations, however, social capital shows declines over the 20-year period.

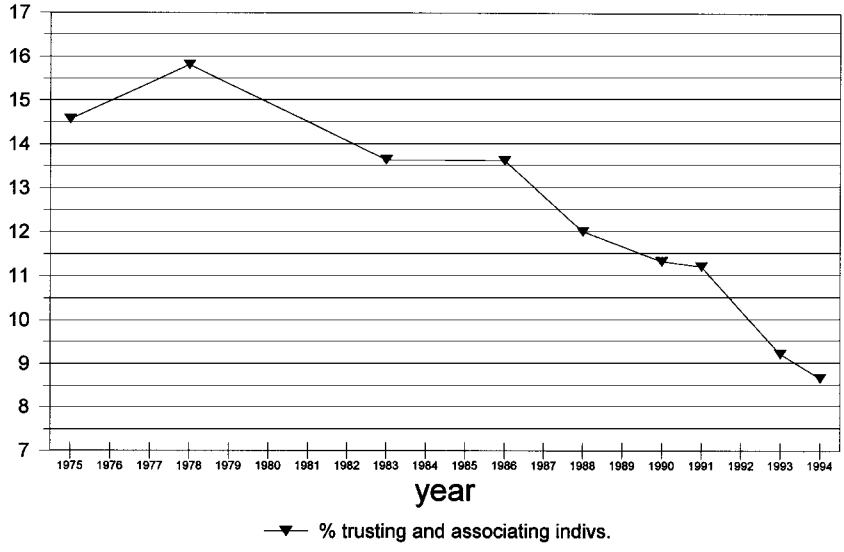

FIG. 14.—Individual social capital over time

CONCLUSION

This article has attempted to expand upon both theoretical discussions of social capital and empirical analyses of its potential decline in the United States. In the article, I present an empirical model of social capital that corresponds to two theoretically outlined components—trust and associations. I also distinguish between social capital at the national or community level and social capital at the individual level and within-group level. My empirical model contains multiple indicators of each component and accounts for error in the measurement of these indicators. I test for a linear decline in social capital over a 20-year period. In addition, I estimate a more flexible model that uses dummy variables for each year and considers specific yearly effects on some indicators.

In summary, my results do not consistently support Putnam's claim of a decline in social capital. I do find that my measure of social capital, as a combination of trust and associations, shows a decline over the time period. This is mainly due to a strong and consistent decline in trust in individuals over the period 1975–94—about a 0.5% drop per year. I do not find a general decline in trust in institutions, however, once scandals in particular years are included. While discussions of trust in institutions anecdotally mention the importance of specific events (e.g., Lipset and Schneider 1983, p. 399; Wuthnow 1997, p. 15), none empirically estimate

their effects. The difference between trust in specific institutions and a more general level of trust in institutions is important to distinguish in this literature. The theory of social capital is concerned with trust at the more general level (closer to legitimacy), and so it is important to note that this general trust in institutions has not declined over the period even though specific institutions were influenced by scandals.

While trust in individuals has declined over the time period, the second component of social capital, the level of associations, remains unchanged. Membership in groups has not declined, and there has been little practical change in the amount of time that individuals spend with neighbors and friends outside the neighborhood. There is some evidence for a shift toward more associations outside of neighborhoods, which is corroborated by Wuthnow (1997, p. 41) who shows that more people are looking outside of their neighborhoods for new friends. Whether this slight trend toward associating outside the neighborhood will decrease social capital by decreasing the quality of interaction or increase it by expanding crosscutting ties requires further research.

This article provides two additional results. First, my analysis of the variance of social capital shows no general change in the dispersion of social capital over time. However, Wuthnow (1997) makes the important observation that a decline in the associational component of social capital is not evenly spread among the population but is instead concentrated in "marginalized" sections of the population. Assessing differences in the amount of social capital held by different segments of the population and how that distribution may have changed over time is essential future research.

Second, this article provides evidence that the relationship between the indicators of social capital and the theoretical concept of social capital has not changed over time. This information should make us feel safer when assessing social capital in time periods for which we do not have multiple indicators. For example, some have argued that general declines in trust began in the 1960s. To test such an assumption, we must utilize a longer time series. The questions on trust in individuals have been asked in various surveys since 1964. Since the interpretation of those questions was stable in the time period I consider, 1975–94, it is likely that it is stable in time periods before 1975 as well. Trends in those questions before 1975 do indicate that the decline in trust began even before the time period I consider (see Smith [1997] for a compilation of data for the longer time period).[42]

[42] While Smith (1997) is directly interested in a measure of "misanthropy" over time, his article provides data on trust over a long period of time. The data display a long-

In considering the implications of these results, we must remember that this article was not a simple test of Putnam's thesis. Instead, the question of a decline in social capital ties into classic concerns in sociology about declines in community and their potentially detrimental consequences. If our theories are correct, then a decline in social capital could mean problems for the maintenance of U.S. democracy in the future.[43]

It appears as yet that we do not have to worry about a decline in associations or a general decline of trust in institutions. However, the strong, consistent decline in trust in individuals (and its effect on social capital as the combination of trust and associations) could have some potentially detrimental consequences. For example, consider the recent rise of gated communities and the increased use of private security guards. It could be that our trust in one another impacts how we organize our lives and how we choose to spend our money (or how much money we spend). Or, consider the recent article in *Science* (Sampson, Raudenbush, and Earls 1997) that showed that trust, as one component of collective efficacy, is linked to reduced violence in neighborhoods. As we consider the *effects* of social capital in more areas, we can better understand the consequences of a *decline* in social capital. For example, Wilson and Musick (1997) found that social capital was related to higher rates of volunteering. Finally, there is always the possible negative impact on democracy from a decline in trust.

While this study represents an improved estimate of national-level social capital, researchers need to construct and obtain more precise measures of social capital for present and future assessments. Most important, a measure of the crosscutting ties between associations is sorely needed. Without such a measure, we can not fully establish whether U.S. involvement in associations produces *positive* social capital for the nation. Also, this article focused on the measurement of social capital and changes in its level over time. It did not consider social capital in subgroups of the population or *reasons* for changes in social capital over time. Further research is therefore needed to understand the determinants of social capital (e.g., Brehm and Rahn 1997; Wuthnow 1997) and whether it can be transferred or "infused" from areas or groups with high social capital to groups with low social capital.

The idea of social capital is linked to many classical theories of what

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term decline in the variables "trust" and "fair." "Helpful" shows a more variable pattern in both the *GSS* data and non-NORC sources over time.

[43] One important question is whether a certain "threshold" of social capital is necessary for the successful maintenance of democracy. It may be that public goods remain undisturbed until social capital falls below some level. Determining the presence and value of such thresholds would be interesting future research.

makes a "good" society. Understanding this, we should continue to monitor the level of social capital in the United States. While this article has not shown a consistent decline in the level of both components of social capital over the last 20 years, their combination *has* declined. And, the possibility of change in the future should not be ignored. We should also consider ways to protect and enrich our stock of social capital to ensure a healthy society in the future.

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