

ECOLOGY AND CULTURE IN THE COMMUNICATION OF PRECEDENT AMONG STATE SUPREME COURTS, 1870-1970

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State supreme courts frequently cite each other as authorities. These citations constitute the interstate communication of precedent. The major direct predictors of this inter-court communication are the legal capital of the cited court, the difference in legislative innovativeness between the two states, and contemporaneous interstate migration. After 1940, inter-court communication is more strongly related to interstate migration than to any other predictor in the analysis. The relationship between interstate migration and inter-court communication suggests that the interstate communication of precedent is affected by cultural regionalism. Inter-court communication is not increased by similarity between states in population size or in levels of urbanization and industrialization. Courts of populous and urban states are cited more by courts of less populated and rural states, but these relationships are mediated by differences in legal capital, legislative innovativeness, judicial professionalism, and interstate migration. Judicial professionalism and the West's regional reporter system are directly related to inter-court communication in the later years surveyed.

I. INTRODUCTION

The fifty state courts of last resort (most often called state supreme courts) head entirely separate jurisdictions and have no control over one another's decisions. But they share the common law tradition, they speak the same legal language, and on a nearly daily basis they cite one another's decisions and opinions as good reasons for their own decisions. This communication is one of the principal means by which state

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supreme courts develop common policies, but it is unencouraged and virtually unconstrained by any enforceable rules or institutional norms. Moreover, the communication is structurally incomplete: not all courts communicate with all others at all times about all issues. In some areas of law, such as tort, the communication among state supreme courts is believed to be so universal that the courts may be viewed as a single decentralized organization (Shapiro, 1972). In other areas, such as criminal law, communication is probably less thorough. Even where there is communication, the spread of ideas can be slow (see Canon and Baum, 1981). Further, within the twentieth century, variation in the rate of communication between courts has been increasing (Harris, 1982).

In the scientific study of law, it is commonly observed that courts respond to their social and cultural environments, but it is difficult to show precisely which social and cultural forces matter. Communication among state supreme courts may be a window to the day-to-day response (or non-response) of the courts to such forces. If state supreme courts cite the decisions of other courts that they agree with or think they should agree with, and if their policies either deliberately or unconsciously reflect certain aspects of state social structure or culture, they will tend to cite the courts in states that are similar in crucial respects; and an analysis of communication between the courts should reveal the crucial areas of similarity.

Some would argue that communication through citation consists of after-the-fact rationalizations. It may well be that judicial citations to authority are largely a symbolic display—that courts, like other organizations, gather and display more information than they use to make decisions (Harris, 1985). To the extent this practice exists, it strengthens the connection between policy similarity and communication. If a court does not consult other courts' cases to improve its own decision-making, but only cites out-state cases that are consistent with the decision it has already made, it will only communicate with courts with which it agrees on the policy in question.

Some empirical research suggests that differences in state social ecology¹ are likely to affect communication among the courts. States' socioeconomic characteristics appear to affect the types of cases heard by their supreme courts (Atkins and Glick, 1976; Kagan *et al.*, 1977; Friedman and Ladinsky, 1967),

¹ By social ecology I mean large-scale social, economic, and demographic features of states (see Hofferbert, 1966).

the decision-making processes of the courts (Atkins, 1976; Canon and Jaros, 1970; Kagan *et al.*, 1978), and specific legal rules developed in the courts (Friedman, 1967; Rubin, 1977; compare White, 1973). Some contemporary jurists suggest that the litigation process and the use of precedent in judicial decision-making can by themselves make the common law economically rational in the long run (Rubin, 1977), and some also suggest that right-minded judges have tried to shape the law so that it is economically rational (Posner, 1977). If the policies of state supreme courts are adapted to socioeconomic conditions, either intentionally or through the workings of an "invisible hand," and if economic policies are reflected in inter-court communication, communication should be greater when socioeconomic structures are similar.

There is less evidence to suggest that cultural² differences between states will affect inter-court communication. Cultural regionalism has been found in differences between state public policies and state laws in general (Elazar, 1972; Gastil, 1975a; Harries and Brunn, 1978; Sharkansky, 1970; Walker, 1969), but the question rarely has been asked about courts (but see Canon, 1973). Recently, Canon and Baum (1981) found little evidence of regionalism in the interstate diffusion of tort law innovations: the order in which state supreme courts have adopted plaintiff-oriented tort doctrines apparently does not correspond either to the regional political philosophies indicated by general election returns and Elazar's (1972) classification of political cultures or to recognizable geographic regions. Canon and Baum conclude that if any regionalism has ever existed in the diffusion of judicial policies, it is probably diminishing (1981: 985).

My findings are different. Based upon the analysis of more than 18,000 interstate citations in 5976 state supreme court opinions written between 1870 and 1970, I will present evidence for the following claims. (1) Social ecological similarity between states does not lead to communication between courts. (2) Communication between courts does reflect cultural regionalism. Relative to other determinants of inter-court communication, the influence of cultural regionalism increased between 1870 and 1970. The effect of cultural regionalism is independent of the distribution of legal capital, legislative innovativeness, judicial professionalism, and social ecology. (3)

² Culture refers to "patterns of behavior embodied in thought, speech, action and artifacts, transmitted by language and systems of abstract thought" (*Webster's Third New International Dictionary*).

Precedent flows from more populated states to less populated ones, and from more urban states to less urban ones, but the distribution of legal capital, legislative innovativeness, judicial professionalism, and cultural regionalism mediate these relationships.

II. THEORY

Before considering why social ecology and cultural regionalism might affect inter-court communication, I will discuss some likely technical and institutional influences on this communication. These include the stocks of accumulated decisions, the West's regional reporter system, legislative innovativeness, and judicial professionalism. These potential effects are interesting in their own right, but their more important role would be to mediate the effects of social ecology and cultural regionalism. The hypothetical effects are as follows.

*Technical Effects: Legal Capital and the Regional Reporter System*³

Some courts have accumulated more precedent than others by deciding more cases and writing more opinions. If courts prefer to rely on their own prior decisions when possible (Shapiro, 1972), we would expect that the more such "legal capital" a court has, the less it will need to borrow on the experience of others, and the more it will be borrowed from (compare Landes and Posner, 1976), and communication will tend to be from older, more experienced courts to younger, less experienced ones (Friedman *et al.*, 1981).

In the late nineteenth century, the West Publishing Company began issuing reports of state supreme court opinions in seven more or less regional editions.⁴ The appellate courts and their bars may be especially likely to own and consult the

³ The quantity of written material and the organization of the published editions of written materials are technical forces because they affect inter-court communication by providing simple access to prior cases, and would operate in a similar fashion in any institution making heavy use of citations to authority (for example, science).

⁴ The Atlantic Reporter contains opinions from DE, CT, ME, MD, NH, NJ, PA, RI, and VT; the Northwestern Reporter, opinions from IA, MI, MN, NB, ND, SD, and WI; the Northeastern Reporter, opinions from IL, IN, MA, NY, and OH; the Pacific Reporter, opinions from AK, AZ, CA, CO, HI, ID, KS, MT, NV, NM, OK, OR, UT, WA, and WY; the Southeastern Reporter, opinions from GA, NC, SC, VA, and WV; the Southern Reporter, opinions from AL, FL, LA, and MS; and the Southwestern Reporter, opinions from AR, KY, MO, TN, and TX.

regional reporter that includes their own state's court's opinions. If so, the communication of precedent will tend to be greater within these seven arbitrary regions than between them.⁵

*Institutional Effects: Legislative Innovativeness and Judicial Professionalism*⁶

The innovativeness of the state legislature (Walker, 1969) may directly affect the interstate communication of precedent in two ways. First, the common law may flow among states in the same directions as statutory law, so that courts in states with more innovative legislatures tend to be cited by courts in states with less innovative legislatures. This could occur because progressive state legal cultures spawn both innovative legislatures and innovative courts, and because policies flow from more to less innovative courts just as from more to less innovative legislatures. Or it could occur because courts deal with judicial issues raised by legislative innovations in the same order as legislatures adopt the innovations.

Second, the courts in states with more innovative legislatures may communicate with each other and not with the courts in states with less innovative legislatures, and the courts in states with less innovative legislatures may communicate with each other and not with the courts in states with more innovative legislatures. This would occur if the more innovative courts found in progressive state legal cultures prefer to cite the opinions of other innovative courts, and the less innovative courts found in traditional state legal cultures prefer to cite other less innovative courts. It could also result from incremental changes in the programs diffusing through the legislatures (Walker, 1973), in that the closer in time two legislatures are in their adoption of a program, the more similar their versions of the program are likely to be, and thus the more mutually relevant will be the interpretations of the courts in these states.

⁵ It seemed possible that the distance between courts affected the distribution of published reports, and thus also affected inter-court communication, at least in the nineteenth century. I tested this possibility and discovered that distance is not significantly related to inter-court communication when the other variables are controlled.

⁶ Legislative innovativeness and judicial professionalism are institutional forces because they are particular to the legal system and affect inter-court communication through judgments about the legal meaning of the cited decisions.

These two propositions—that inter-court communication will tend to be from states with more innovative legislatures to states with less innovative legislatures, and that inter-court communication will be greater between states with legislatures of the same level of innovativeness—are not mutually exclusive.

Legislative innovativeness may also affect inter-court communication indirectly because more innovative legislatures are likely to create more professional courts (see Walker, 1969). There has been and still is considerable variation in state judicial professionalism, that is, in the correspondence of court structure, administration, and judicial selection, tenure, and salaries to the standards of professional groups promoting judicial independence (Glick and Vines, 1973). If, as its proponents hope, judicial professionalism is good for the common law—if it produces useful, generalizable appellate decisions—more professional courts are likely to be more cited.

Social Ecology

To the extent that the common law is a practical instrument for solving particular social problems arising from particular social and economic conditions, the greater the social and economic similarity of a pair of states, the more likely it is that their courts will face common problems that provide a shared basis for communication.

Of the many dimensions of social and economic conditions, three that are widely thought to be important for the form of social problems and consequently for law are industrialization, population, and urbanization (Kagan *et al.*, 1977; Friedman and Ladinsky, 1967). Industrialization affects the economic questions faced by courts and is strongly related to other important ecological variables, including population density, farm acreage, owner occupancy, and urbanization (Hofferbert, 1966). In a like fashion, states with large populations may share social and legal problems not shared by less populated states.

Urbanization could affect the communication of precedent in two ways, if Fischer's thesis (1975; 1978) is correct. Due to the size and concentration of city populations, cities are in theory society's main sources of material, organizational, and ideological innovations (Fischer, 1975; Stinchcombe, 1965). Fischer proposes that the urban-to-rural diffusion of culture occurs in steps: innovations move first from big cities to smaller cities and then to the countryside. If the theory covers

supreme courts and if more innovative courts are in more urban states, precedent will tend to flow from urban to rural states. Fischer also argues that since the creation of new culture in the cities is continuous and since the urban-to-rural diffusion of culture takes time, there will be continuing urban-rural differences. If the supreme courts are sensitive to cultural differences between urban and rural states, they will tend to borrow ideas from courts in states at the same level of urbanization.

Population differences may also affect inter-court communication. Canon and Baum found that more populated states have more innovative courts, and that neither industrialization nor urbanization is consistently related to judicial innovativeness when population size is controlled (1981: 980). They interpret this relationship by theorizing that states with larger populations have higher litigation rates and that the higher a state's litigation rate, the more opportunities its court will have to innovate. The process may, however, have been less direct. Kagan *et al.* (1977; 1978) interpret rapidly expanding caseloads in rapidly expanding states as more of a problem than a resource for courts. Increased supreme court discretion to choose cases and the introduction of intermediate appellate courts have been the major reforms designed to alleviate the burden of expanding caseloads. Reformed courts apparently have been able to concentrate on the more important cases (Friedman *et al.*, 1981). Perhaps these reforms give courts the opportunity to innovate, and perhaps the effect of high litigation rates has been to provide the impetus for reform.

In the absence of totally effective caseload control, population size and litigation rates are likely to affect the interstate communication of precedent primarily through their effects on the stocks of legal capital of the courts: larger states will have more appellate cases, and smaller states will have fewer. Both population and urbanization may have indirect effects on inter-court communication through their effects on legislative innovativeness and judicial professionalism, because larger states and more urban states tend to have more innovative legislatures (Walker, 1969) and more professional judiciaries (Glick and Vines, 1973).

Cultural Regionalism

There are important cultural differences among states that are not accounted for by urban innovativeness. These

variations consist of a wide variety of differences in life style and values, associated, for example, with differences in religion, language, ethnicity, architecture, violence, education, and politics (Gastil, 1975a). These cultural differences initially resulted from regional variations in settlement patterns (Gastil, 1975a; Zelinsky, 1973). Several authors have argued that regional cultural variations are reflected in differences in social philosophies and beliefs about appropriate behavior that are translated into law. Elazar (1972) argues that interstate cultural variations are a major cause of state political variation. Sharkansky assigns to "culture and history" the inter-regional variation in state politics and policy not correlated with income per capita, urbanization, and total income (1970: 99-122). Harries and Brunn argue that the "layer cake" of imported state cultures affects the "regional social philosophies" expressed in law (1978: 10-15).

It is not clear whether cultural regionalism consistently affects state politics independently of social and economic forces. Some empirical investigations show relationships between state culture and political behavior that are independent of the effects of social ecology, but others do not. Sharkansky found that a region's noneconomic characteristics were more important than economic characteristics in explaining voter turnout, party competition, legislature size, educational policy, and the amount of aid to families with dependent children (1970: 122). He concluded that "regional norms . . . persist over time and . . . influence current styles in state politics and public services" (1970: 144). Harries and Brunn claim that "space" matters but do not indicate specific social or cultural sources of its effects (1978: 34-35). Walker (1969) and Gray (1973) both argue that regional ties between states lead to the diffusion of policies through their legislatures, although Walker assigns more importance to regionalism than does Gray. Canon and Baum (1981) found that Elazar's distinction among moralistic, traditionalistic, and individualistic political cultures fails to predict innovativeness in the tort policies of state supreme courts, and they could not detect any regionalism in the results of a factor analysis of the 23 tort doctrines they used to measure innovativeness.

Cultural regionalism may not, of course, affect different kinds of state governmental and political behavior in the same way. One reason why it is unclear whether different kinds of governmental and political behavior are similarly affected by regionalism is that the operational definitions of regionalism

used in different studies have varied greatly. Cultural and politico-cultural geographers have divided the nation into as many as forty regions and as few as three, and they tend to disagree about the boundaries of the regions even when they agree about their number (Gastil, 1975a: 25-46; Elazar, 1972: 120-54). Sharkansky acknowledges the difficulty of settling on a single division of the states into regions, and solves the problem by using several definitions and sorting the states into 17 overlapping sets and subsets (1970: 26-27). Walker (1969) and Canon and Baum (1981) avoid the definitional problem first by clustering the states with factor analyses of the adoption orders of sample policies and then, presumably on common sense grounds, by either recognizing regionalism in the clusters (Walker) or not recognizing it (Canon and Baum). In a similar fashion, Harries and Brunn (1978) place the values of their dependent variables on a map of the United States and inductively discover regionalism in state laws.

Here I define regionalism in two ways. The first is by proximity. By this definition, a state's cultural region consists of its immediate neighbors. This definition may be too simple because it implies that culture changes incrementally with each state border and roughly continuously with distance. It may be not simple enough because it implies that two neighboring states never have precisely the same region. Nevertheless, this definition may be the best way to represent the argument that regionalism exists when state policy-makers look to their neighbors for ideas (see Knoke, 1982), or that the state next door may be the first intervening opportunity in the search for model policies (see Stouffer, 1940; Shapiro, 1964).

My second definition of cultural regionalism is based on what is probably the primary source of cultural variations among the states. This source, about which cultural geographers appear to agree, is the patterns of migration and settlement across the states. Following Zelinsky's (1973) argument that state cultures were largely determined by the first white European or American settlers, Gastil places regional boundaries where there are "significant discontinuities" in the migrants' original cultures (1975a: 26-27). Elazar (1972) and Harries and Brunn (1978) claim that the geography of political culture in particular was initially determined by streams of white migration into the frontier.

If cultural regions are established by migration patterns, migration patterns will be a useful indicator of cultural regionalism, and if communication between courts responds to

cultural regionalism, migration patterns should predict inter-court communication. If the flow of precedent is an element of the cultural impact of one state on another, the greater the migration from one state to another, the greater will be the expected impact of decisions from the former state on the court of the latter.

Given this general proposition, the question remains whether only the initial patterns of settlement matter or whether continuing migration also affects culture and, hypothetically, inter-court communication. Cultural geographers disagree about the general importance of continuing migration. Gastil (1975a) argues that continuing migration has occurred mainly within established regions, implying that continuing migration is as much a result as a reinforcement of established cultural differences. Harries and Brunn argue that the "layering" of culture continues, citing the recent urban-to-rural and northeast-to-sunbelt migration trends (1978: 10-15). Elazar argues that continuing migration among the states has kept political cultures "fluid" and that changes in the direction of migration streams have led to important changes in state politics (1972: 114-15). If so, inter-court communication may be related to recent as well as initial migrations.

Proximity may have two indirect effects on inter-court communication, one of them through migration. Other things being equal, one would expect more intermigration between proximate states; and the West's system of regional reporters is organized so that the decisions of proximate states are likely to be collected in the same reporter.

Further, if interstate migration affects inter-court communication, it may be another mechanism by which population size affects inter-court communication. Other things being equal, one would expect that the greater the difference in population between two states, the more people will move from the more populous state to the less, and the fewer will move in the opposite direction. If the cultural impact of one state on another is proportionate to migration rates, more populous states will have greater potential cultural impact than less populous ones and will be more immune to the cultural impact of others.

III. DATA AND METHOD

The units of analysis in this study are directional interstate relationships. These are relationships constituted by ordered

pairs of different courts and their states. Each directional relationship pairs a citing and a cited court. It takes on values for the rate of communication from the cited to the citing court and for each of the variables that may predict the rate of communication. For example, "Alabama cites California" represents one ordered pair, and thus one unit. "California cites Alabama" represents a different ordered pair. The courts may be imagined as members of a communication network, in which the directional ties vary in strength depending upon the frequency of inter-court citations (Harris, 1982; see Shapiro, 1972). Associated with each tie are the other relations between the two courts, such as belonging to the same West's region, and relations between the states in which the courts sit, such as the signed difference⁷ in state urbanization. The method here is to analyze the correlations between the directional citation ties and the other inter-court and interstate differences and connections.

There are 16 citing courts in the sample. They are the courts of Alabama, California, Idaho, Illinois, Kansas, Maine, Michigan, Minnesota, Nevada, New Jersey, North Carolina, Oregon, Rhode Island, South Dakota, Tennessee, and West Virginia. The data on the interstate communication of precedent are drawn from the majority opinions in a sample of 5976 cases decided by these 16 state supreme courts between 1870 and 1970. The sample of cases was collected by Cartwright, Friedman, Kagan and Wheeler; the sampling and coding procedure is described in their reports on the business, evolution, and opinion style of the courts (Cartwright, 1975; Kagan *et al.*, 1977; 1978; Friedman *et al.*, 1981). There are 48 cited courts, Alaska and Hawaii being excluded. Thus, in total, there are 16×47 , or 752, ordered pairs of different courts, or units of analysis.⁸ These represent one-third of all of the directional ties in the network. Because the sample years are every fifth year between 1870 and 1970 (i.e., 1870, 1875, 1880, . . . 1970), and the cases were randomly selected from opinions in each of the sample years, the statistical inferences apply only to this approximately one-third of the total network in these 21

⁷ A signed difference includes a sign indicating the direction of subtraction. For example, the signed differences between 2 and 4 are +2 and -2, depending on whether 2 is subtracted from 4 or vice versa.

⁸ Actually, $16 \times 47 - 1$, or 751. The West Virginia-citing-Virginia relationship is excluded because, well into the twentieth century, the West Virginia court apparently regarded the decisions of pre-Civil War Virginia as its own common law and cited Virginia cases at a rate far above that of any other inter-court relationship in the sample.

sample years. These states were selected to be representative of the 48 contiguous states with respect to population, industrialization, urbanization, per capita income, racial composition, and legislative innovativeness (Kagan *et al.*, 1977).

The dependent variable is the communication of authority between courts. The measure of inter-court communication is the rate at which the first named court is cited by the second. Each reference to a decision or opinion that includes the full name of the case, such as "*Jones v. Smith*," or the citation itself, such as "123 Pac. 456," is counted as a citation. A given case may be cited more than once in a single opinion. The sum of all the citations of the cited court by the citing court in the year or period is the rate.⁹ The 16 courts are representative of the 48 with respect to their interstate citation behavior.¹⁰

Measuring substantive communication by counting citations is not new. In the sociology of science, citation rates are a conventional measure of the status and influence of particular studies, of individual scientists, and, in a fashion very similar to this study, of communication between scientific fields and subfields (see, e.g., Cole and Cole, 1973). The difference between this method and the "leading case" method of legal scholarship is that, rather than identifying the dominant, archetypal decision within each line of legal thought, the goal is to capture the development and communication of lines of thought in their diffuse, practical, case-to-case manifestations. This approach is consonant with recent scientific theories of precedent (Shapiro, 1970; 1972; Landes and Posner, 1976), with some jurisprudential theories (Levi, 1949; Llewellyn, 1960; Merryman, 1954; 1977), and with the approach taken in other studies of this same sample of cases (Friedman *et al.*, 1981; Kagan *et al.*, 1977; 1978).

⁹ The sample of 5976 opinions consists of 18 opinions per court per sample year, or 126 opinions per court in each of the three periods. In each period, slightly more than half of the opinions contain one or more interstate citations. Thus, on average, more than 63 opinions per court per period contribute positively to the indicator of communication.

¹⁰ I compared sample and non-sample courts in the frequency with which they were cited by the sample opinions, and, using Shepard's citation index, in the frequency with which they cited the sample opinions. Adjusting for the inability of sample courts to be on both sides of an ordered pair, the mean number of interstate citations received by all courts from the sample opinions is 401, and the standard deviation is 451. For the sample courts alone, the figures are, respectively, 396 and 441, and for non-sample courts alone, 403 and 462. The mean number of interstate citations to the sample opinions through 1975 is 198, and the standard deviation is 105. These figures are 194 and 103 for the sample courts, and 199 and 104 for the non-sample courts. The data are available on request.

In the propositions developed above, substantive communication among the courts is the dependent variable, and citation rates are the measure of substantive communication. Citation rates should be related to the independent variables if substantive inter-court communication is related to the independent variables in the manner described above *and* citations between the courts indicate substantive inter-court communication. If citations do not measure substantive communication—if they are merely random noise—then the analysis of these data should lead us to reject the hypotheses stated above.¹¹

The first independent variable is the amount of precedent accumulated by the cited court, and the second independent variable is the amount of precedent accumulated by the citing court. The measure of the amount of precedent accumulated by a court is the number of volumes of reported cases issued by the state. This measure of legal capital is rough, because some judges are more verbose than others, and because some publishers print more words per page and more pages per volume than others. The principal alternative measure would be the size of the caseload. Courts cite opinions and arguments, however, not merely decisions, and so the amount of text is probably a better measure of legal capital than the number of decisions. A court with a great deal of discretion, an intermediate appellate court, and a small caseload may create more citable material out of a hundred cases than another court does out of four hundred. The first prediction is that the more precedent the cited court has accumulated, the greater the rate of citation will be. The second prediction is that the less precedent the citing court has accumulated, the greater the rate of citation will be.

The third independent variable is the West's regional reporter system. This variable is dichotomous: two courts are

¹¹ Courts often cite decisions they disagree with, but these are seldom interstate citations. Because the state supreme courts are independent and are under no obligation to pay attention to one another, when a court disapproves of another's prior decision or opinion, the earlier case is, with rare exceptions, ignored. In Nagel's (1962) sample of 4000 citations in state supreme court opinions, for example, none of the disapproving citations were between courts in different West's regions. Also, courts often cite prior cases to distinguish them from the case at hand. But citations to cases that are not completely followed nevertheless indicate the acceptance of a definition or rule. When, for example, a cited case is distinguished from the case at hand on the basis of a difference in "fact situations," the cited ruling is implicitly accepted, and the situation to which it was applied marks part of the situational boundary governing the application of the instant ruling. Disapproving and distinguishing citations, therefore, should pose no problems for this analysis.

or are not in the same West's region. The prediction is that the rate of citation will be higher when the two courts are in the same West's region than when they are in different West's regions.

The fourth independent variable is the signed difference in the legislative innovativeness of the citing court's state and the cited court's state, and the fifth independent variable is the absolute difference in legislative innovativeness between the two states. The measure of legislative innovativeness is Walker's (1969) index.¹² The signed difference in legislative innovativeness is the degree to which the legislature in the state of the cited court is more innovative than the legislature of the citing court's state. The signed difference is negative, of course, if the legislature of the cited court's state is less innovative than the legislature of the citing court's state. The absolute difference in legislative innovativeness is the absolute value of the signed difference. The signed difference will be used to test the hypothesis that the communication of precedent will tend to be *from* courts in states with more innovative legislatures *to* courts in states with less innovative legislatures—i.e., that the common law flows in the same direction as statutory innovation. The absolute difference in legislative innovativeness will be used to test the hypothesis that inter-court communication will be greater between states where legislatures are at similar levels of innovativeness. Thus, the predictions are that the greater the signed difference and the less the absolute difference, the greater will be the rate of citation between the courts.¹³

¹² The 88 index innovations include policies concerning welfare, health, education, conservation, planning, administrative organization, highways, civil rights, corrections and police, labor, taxes, and professional regulation.

¹³ Alabama, for example, scores .406 on Walker's index, and California scores .604 (higher scores indicate more innovativeness). Under the hypothesis that precedent will tend to flow from the more legislatively innovative state to the less legislatively innovative state, we expect the signed difference between the cited court's index score and the citing court's index score to be positively related to the citation rate. For the "Alabama cites California" relationship, the signed difference is .604 minus .406, or .198. For the "California cites Alabama" relationship, the signed difference is .406 minus .604, or $-.198$. So we expect Alabama to cite California more than California cites Alabama.

Under the hypothesis that the more similar two states are in legislative innovativeness, the more their courts will cite each other, we expect the absolute difference between the index scores of the two courts to be negatively related to the citation rate. The absolute value of the difference between the index scores of Alabama and California is .198. The index score for Wyoming is .346. The absolute difference between the index scores of California and Wyoming is .258, so we would expect California and Wyoming to cite each other less than California and Alabama cite each other.

The sixth independent variable is the professionalism of the judiciary in the state of the cited court. The measure of judicial professionalism is Glick and Vines' (1973) composite index of state legal professionalism. The prediction is that the citation rate will be greater when the judiciary of the cited state is more professional.

The seventh independent variable is the absolute difference between the two states in industrialization; the eighth is the absolute difference in urbanization; and the ninth is the absolute difference in population. The tenth independent variable is the signed difference in urbanization, and the eleventh is the signed difference in population. The measures of industrialization, urbanization, and population are Hofferbert's (1966). As with legislative innovativeness, each pair of states may be compared in two ways with respect to urbanization and population. The signed difference is the amount the state of the cited court is more urbanized or more populated than the citing court's state, and the absolute difference is the absolute value of the signed difference. The absolute difference in industrialization, urbanization, and population will be used to test the proposition that the courts of ecologically similar states will communicate with each other more than will the courts of ecologically dissimilar states. The predictions are that citation rates will be greater when these absolute differences are small than when they are large. The signed difference in urbanization will be used to test the hypothesis that the common law flows from urban to rural states, and the signed difference in population will be used to test the hypothesis that the common law flows from more to less populated states. The predictions are that citation rates will be greater when these signed differences are greater.

The twelfth independent variable is interstate proximity. This variable is dichotomous: two states do or do not share a border. The prediction is that the rate of citation will be greater when the two states share a border than when they do not.

The thirteenth independent variable is the migration from the state of the cited court to the state of the citing court. The data on interstate migration are the percentages of the native white population of the citing court's state originating in the state of the cited court, for 1870, 1910, 1950 and 1970. For example, the figures for 1870 give the percentage of each state's 1870 native white population that originated in each other state. These data were compiled from census data by Gastil (1975b).

The prediction is that the greater the percentage of the citing court's state's population originating in the cited court's state, the greater the rate of citation will be.

Thus, for example, the values of the variables for the "Alabama cites California" unit of analysis are the rate at which the Alabama court cites the California court, the percentage of Alabama's population originating in California, the signed difference between California's level of urbanization and Alabama's, the fact that the two states do not share a border, and so on. Although the values of some of the variables, such as proximity and the absolute difference in industrialization, are the same for this pair as for "California cites Alabama," the values of other variables, such as the citation rate, interstate migration, and the signed difference in urbanization, are not.¹⁴

The analysis looks separately at three periods. The first period is 1870 to 1900, the second is 1905 to 1935, and the third is 1940 to 1970. The communication rate is determined by the citations in sample opinions written within the period.

For the first period, the measure of accumulated precedent will be the number of volumes of reports issued before 1901. Judicial professionalism will be excluded from the analysis of the first and second periods because Glick and Vines' index focuses on the years after World War II. The first period measures of ecological differences will be based on the Hofferbert index values for 1890. The first period measure of migration from the state of the cited court to the state of the citing court will be the mean of the 1870 and 1910 migration figures.

For the second period, the measure of accumulated precedent will be the number of volumes of reports issued between 1870 and 1935. The measures of industrialization and urbanization differences will be based on the 1920 Hofferbert index values. The measure of migration will be the mean of the 1910 and 1950 migration figures. Because population differences theoretically precede migration, the population

¹⁴ The general symmetry of the hypotheses is an unintended consequence of the theory, and not a goal. The occasional asymmetry results either from specific theoretical propositions or from the lack of a specific theoretical proposition. For example, the propositions that the more legal capital a court has, the less it will need to borrow, and that the more legal capital a court has, the more it will be borrowed from, are separate, and testing them requires separate indicators. There are no expectations regarding effects on inter-court communication of the judicial professionalism of the citing state or of the difference in judicial professionalism. Nor is it proposed that precedent will flow from more industrialized to less industrialized states.

measures will be based on the Hofferbert index values for 1890 through 1940.

For the third period, the measure of accumulated precedent will be the number of volumes of reports issued between 1901 and 1970; the measures of industrialization and urbanization differences will be based on the mean of the 1940 and 1960 Hofferbert index values; the measure of migration will be the mean of the 1950 and 1970 migration figures; and the measures of population differences will be based on the Hofferbert index values for 1920 through 1960.¹⁵

First, I examine the bivariate relationships between inter-court communication and each of its hypothetical causes. Then, using the variables with significant zero-order relationships to inter-court communication, I conduct multivariate analyses and construct path models of direct and indirect effects for each period.

IV. ANALYSIS: ZERO-ORDER RELATIONSHIPS

Table 1 shows the correlations between the strength of inter-court communication and each of the independent variables. Each of the hypotheses concerning the distribution of legal capital is initially supported in at least one of the three periods. The precedent accumulated by the cited court is most powerfully and most consistently related to inter-court communication: the product-moment correlations are near .5 in all three periods. The precedent accumulated by the citing court also shows a consistent relationship to inter-court communication, but it is not as strong, varying between $-.2$ and $-.1$ in the three periods. The relationship of West's reporter regions to inter-court communication increases over the three periods: in the first period, it is statistically insignificant; in the second, it is weak (.1); and in the third, it is

¹⁵ In operationalizing legal capital, I compared measures reaching back various numbers of years prior to the period of concern. For the second period, the correlations between the total number of volumes of reported cases before 1935 in both citing and cited courts and inter-court communication were no greater than the correlations between the number of volumes of reported cases between 1870 and 1935 and inter-court communication. For the third period, neither the correlations between the total number of volumes of reported cases prior to 1970 and inter-court communication nor the correlations between the number of volumes of reported cases between 1870 and 1970 and inter-court communication were greater than the correlations between the number of volumes between 1901 and 1970 and inter-court communication. Thus, including the nineteenth-century volumes in the measures of legal capital for the third period would not change the finding, presented below, of a decline in the importance of legal capital during the third period. Although the nineteenth-century cases were still available in 1940 and 1970, very few were cited outside of law schools.

stronger (.2). This is not surprising, because most of the regional reporters began publication only in the middle of the first period, and almost all of the official replacements of individual state reporters by the regional reporters occurred in the third period.

Table 1. Relationships between Inter-Court Communication and Technical Factors, Institutional Factors, Social Ecology, and Cultural Regionalism (Pearson's product-moment correlations)

	1870-1900	1905-1935	1940-1970
<u>Technical Factors</u>			
cited's reports	.56*	.53*	.45*
citing's reports	-.14*	-.20*	-.10*
West's regions	.03	.09*	.19*
<u>Institutional Factors</u>			
signed legis. innov. diff.	.37*	.46*	.29*
absolute legis. innov. diff.	.18	.18	.12
cited's judicial professionalism			.33*
<u>Social Ecology</u>			
absolute indust. diff.	.11	.02	.00
absolute urban. diff.	.08	.10	.01
absolute popul. diff.	.38	.33	.24
signed urban. diff.	.20*	.36*	.23*
signed popul. diff.	.47*	.54*	.40*
<u>Cultural Regionalism</u>			
proximity	.12*	.13*	.16*
interstate migration	.46*	.47*	.49*

*p less than .01, one-tailed test

Two of the three hypotheses concerning the relationship between institutional forces and inter-court communication are initially supported. The correlations between the signed differences in legislative innovativeness and inter-court communication are between .3 and .5, supporting the idea that the common law flows in the same directions as statutory innovations. The hypothesis concerning the relationship between the absolute difference in legislative innovativeness and inter-court communication is not supported. The hypothesis was that the greater the difference between the legislatures on this dimension, the less communication there would be between their associated courts. Instead of the predicted negative relationship, however, there is a positive relationship in each period. The last hypothesis in this group,

that more professional courts would be more cited, is supported. In the 1940-1970 period, the more closely a court fit the model of professionalism, the more it was cited.

None of the hypotheses concerning the effect of absolute differences in social ecology were supported. Although negative relationships were predicted, in all three periods the correlations between inter-court communication and both the absolute difference in industrialization and the absolute difference in urbanization were either zero or slightly positive, and the correlations between inter-court communication and the absolute difference in population were consistently positive and fairly strong (.2 to .4).¹⁶

Both hypotheses concerning signed differences in state ecologies were supported. The more urban the cited court's state, and the less urban the citing court's state, the greater is the rate of citation, in all three periods. The signed difference in population has a similar effect.

The propositions concerning cultural regionalism are also supported. The zero-order correlations between proximity and inter-court communication are significant in all three periods, an indication that the courts have tended to cite their immediate neighbors. The correlations between interstate migration and inter-court communication are also significant in all three periods. This suggests that the common law has flowed in the same directions as the native white population, for it means that courts tend to cite other courts in states from which the citing court's state has received native white population. The correlations are stable over the three periods, suggesting that this relationship reflects more than just the result of the initial nineteenth-century wave of westward migration.

V. ANALYSIS: DIRECT AND INDIRECT EFFECTS

Each of the significant zero-order relationships might be spurious or be mediated by other variables. The next step, therefore, is to propose a structure of causal relations among the independent variables that so far appear to have some effect and to conduct a multivariate analysis for each period.

¹⁶ Because the logic of the hypotheses implies one-tailed tests, these results are not statistically significant. They are surprising, however, and may be important clues. The patterns reported here concerning the effects of social ecology could occur if dissimilarity encourages the court of the "lesser" (less populous, less legislatively innovative, etc.) state to cite the court of the "greater" state, but does not very much discourage the greater from citing the lesser.

Recall that several potential indirect effects were proposed above. Those propositions are the basis for the structure of the multivariate analyses. They are, again: (a) Proximity may have an indirect effect through the West's system of regional reporters. (b) Proximity and the signed difference in population may have indirect effects through interstate migration. (c) The signed difference in population may have an indirect effect through the legal capital of both the cited and the citing courts. (d) The signed differences in population and urbanization each may have indirect effects through legislative innovativeness and judicial professionalism. (e) The signed difference in legislative innovativeness may have an indirect effect through judicial professionalism.

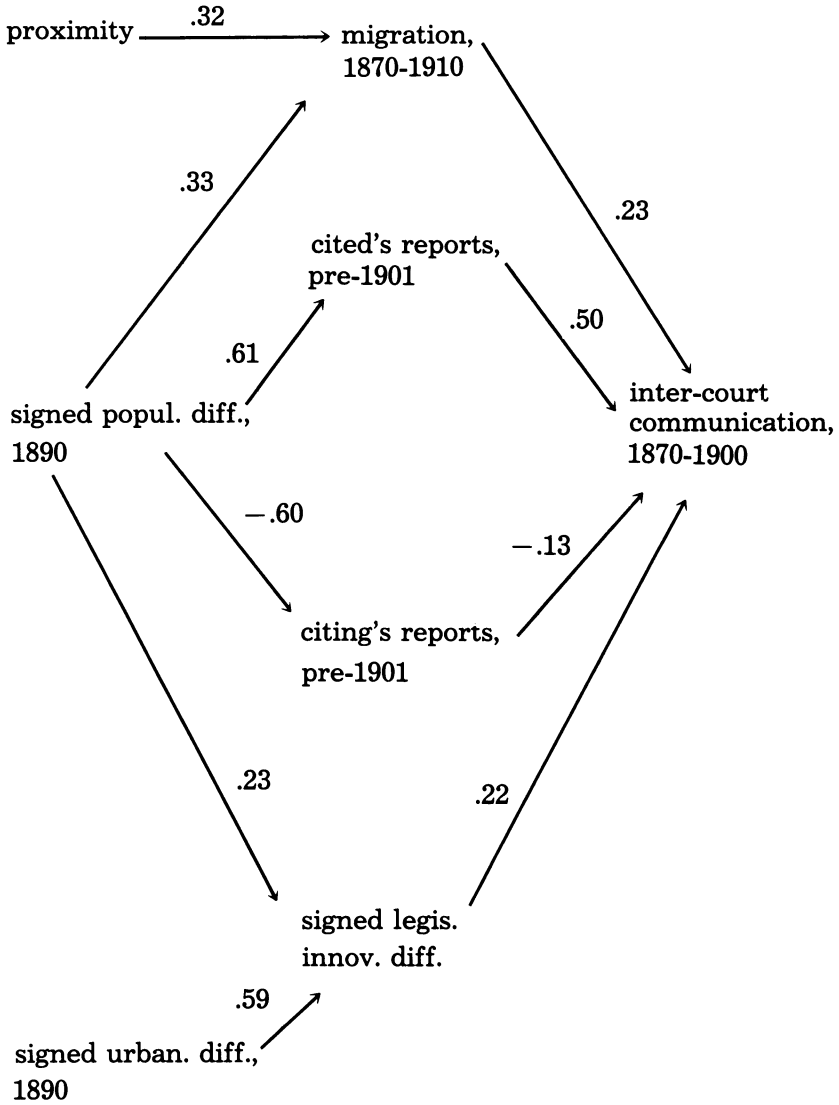
For each period, I constructed multiple regression equations predicting inter-court communication and each of the possibly intermediate variables. In the equations predicting inter-court communication, all independent variables having significant zero-order relationships to citation rates were entered. In the equations predicting each of the intermediate variables, all the theoretically prior predictors were entered. Also entered as controls in the equations predicting each intermediate variable were the other intermediate variables that were both potentially affected by the prior predictors in question and significantly related in either direction to the intermediate variable in question. Tables A, B, and C in the Appendix report these equations for the three time periods.

These equations were used to construct a path model for each period. The path models show the direct effects that were significant at the .01 level in the predicted direction.

Figure 1 presents the path analysis of inter-court communication for the first period, 1870 to 1900. In Figure 1 the only variables to have significant direct effects on inter-court communication are the cited and citing courts' legal capital, the signed difference in legislative innovativeness, and interstate migration. Of these, the cited court's legal capital is the most important. This is consistent with the folklore of nineteenth-century precedent, which holds that the decisions of the major, older, prolific Eastern courts were the most cited. It suggests that the efforts of some of the early Eastern judges to produce an independent corpus of American common law were successful (White, 1976: 43-45).

As expected, the signed difference in population is strongly related to the legal capital of both the cited and the citing courts. That population differences are not directly related to

Figure 1. Path Analysis of Inter-Court Communication, 1870-1900



p less than .01 in all cases

inter-court communication here lends support to Canon and Baum's litigation rate interpretation of the relationship between population and the diffusion of tort policies. Legal capital is, however, only one manifestation of the effect of population.

The effect of population on inter-court communication is also mediated by its effect on state legislatures: the greater the signed difference in population, the greater is the signed difference in legislative innovativeness, and thus the greater the flow of precedent. The figure shows that legislative innovativeness also mediates the relationship of urbanization to inter-court communication, and that the relationship of urbanization to legislative innovativeness is stronger than that of population. In Canon and Baum's (1981) analysis of judicial innovations in tort, when industrialization, urbanization, and population size were controlled, the relationship between legislative and judicial innovativeness disappeared. Canon and Baum see these results as suggesting that innovativeness may be a characteristic of large, urban, industrial states in general and not just of political systems. My results, however, suggest that the relationship of legislative innovativeness to the spread of judicial policy is not the spurious result of state innovativeness. As expected, the effect of population on inter-court communication is mediated also by interstate migration.

Interstate migration also mediates the effect of proximity. The lack of any direct effect of proximity on citing behavior suggests that borrowing from courts in neighboring states was not a major tactic in early judicial policy-making.

Table 2 shows, for the first period, the total direct and indirect effects on inter-court communication of the variables having significant paths in the model.¹⁷

Figure 2 shows the path analysis for the second period, 1905 to 1935. Because of the introduction of the West's regional reporter system, this picture is more complicated than the previous one. The regional reporter system began to have a small direct effect on inter-court communication: courts whose opinions were reported together tended to cite each other more than courts of different reporter regions. By virtue of its

¹⁷ The indirect effects summarized in Table 2 (and in Tables 3 and 4 to follow) are those that operate through the paths hypothesized. They do not include indirect effects operating through paths that are not hypothesized, whether those non-hypothesized paths would be between variables that are exogenous or endogenous in this analysis.

Table 2. Total Direct and Indirect Effects, 1870-1900

Dependent Variable: Inter-Court Communication			
Independent Variables	Direct Effect	Indirect Effect	Total
cited's reports, pre-1901	.50		.50
citing's reports, pre-1901	-.13		-.13
signed legis. innov. diff.	.22		.22
signed popul. diff., 1890		.51	.51
signed urban. diff., 1890		.12	.12
proximity		.07	.07
migration, 1870-1910	.23		.23

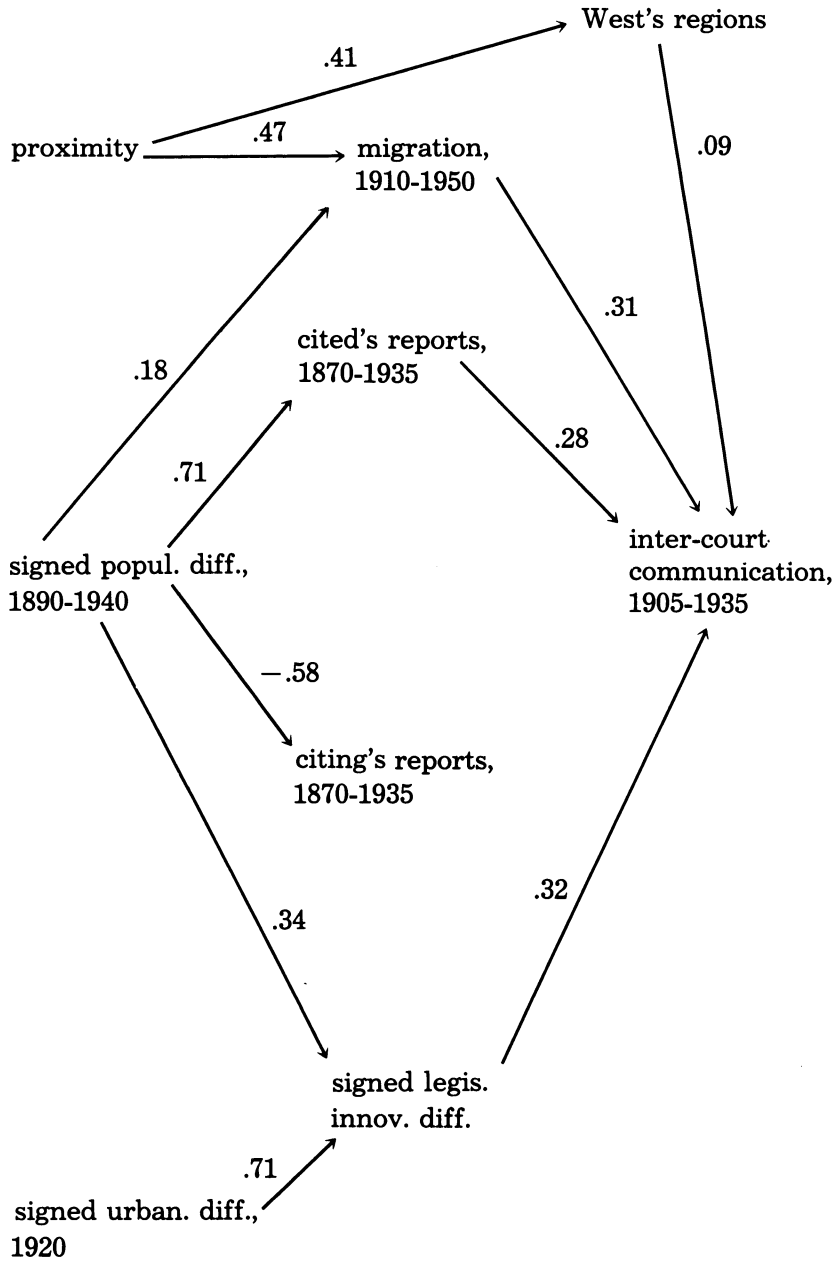
relationship to the structure of the West's system, proximity has an additional indirect effect on inter-court communication in these years.

The accumulated legal capital of the cited court was no longer the single most important factor in inter-court communication in the 1905-1935 period; it declined in relative importance, while legislative innovativeness and interstate migration increased in importance to the point where all three were roughly equal in impact. The legal capital of the citing court also declined in importance and no longer has a significant direct effect. This decline in the importance of legal capital is consistent with the structural history of the communication of precedent. In the early twentieth century, the inter-court communication network became much more homogeneous. All courts were more likely to cite all others; all courts produced more cases; and differences among the courts in the rates at which they transmitted precedent declined (Harris, 1982). As in the first period, the legal capital of the cited court is the principal mechanism by which population differences affect inter-court communication.

The relationship of the signed difference in legislative innovativeness to inter-court communication is relatively stronger in this period. This increase may reflect an increase in the courts' attentiveness to statutory questions, or it may simply reflect a temporal weighting in Walker's index on early twentieth-century issues.

The regionalism expressed by the relationship of interstate migration to inter-court communication is now as important as legal capital and legislative innovativeness. By itself, this suggests that continuing migration may have been important for cultural regionalism. A closer examination of the data supports this view. If the indicators of migration before 1901

Figure 2. Path Analysis of Inter-Court Communication, 1905-1935



p less than .01 in all cases

and migration between 1910 and 1950 are both entered into this equation, migration in the later period is significantly related to inter-court communication, while migration in the earlier period is not.¹⁸ This suggests that the interstate communication of precedent has changed along with changes in interstate migration patterns. To the extent regionalism in inter-court communication reflects native white migration patterns, it was not permanently established by the first waves of migration.

The other form of cultural diffusion, that from urban to rural states, also appears to increase in relative importance, because of its indirect effect through legislative innovativeness. Urbanization differences in 1920 remain strongly related to differences in legislative innovativeness, which, as noted, are in turn more strongly related to inter-court communication.

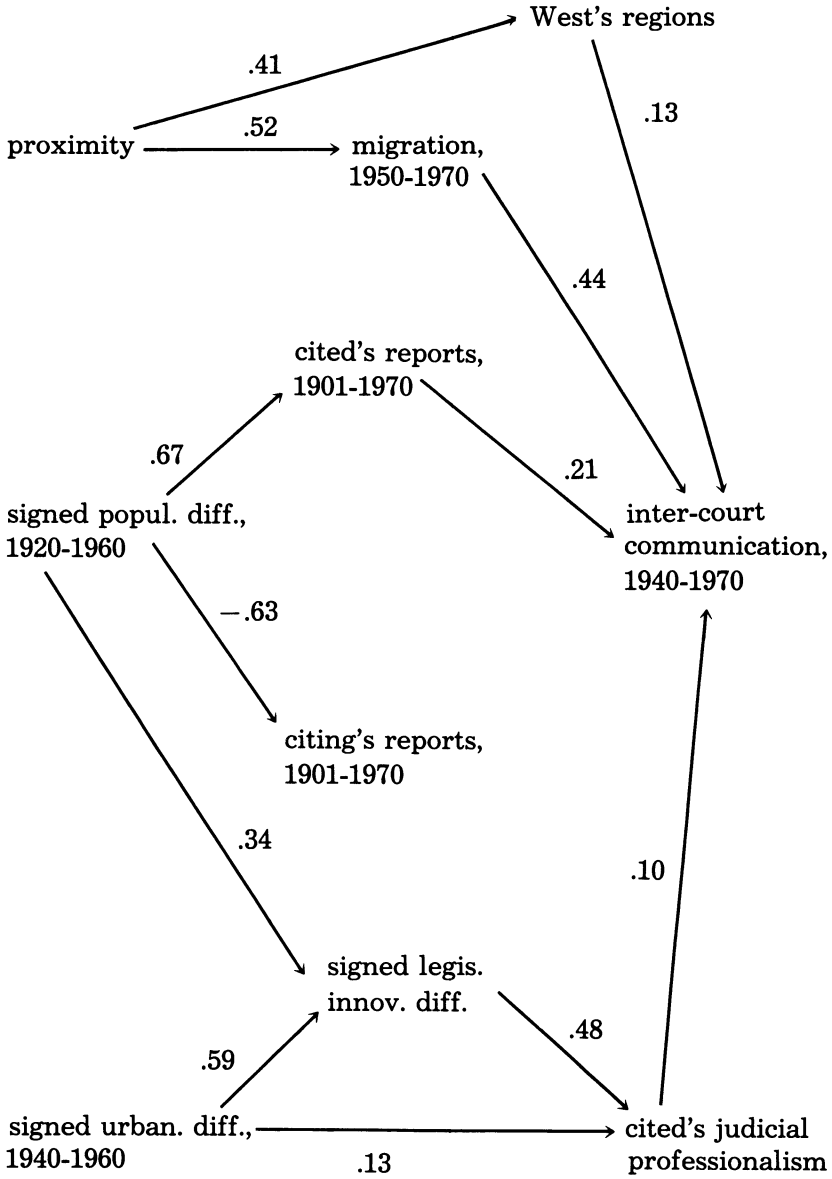
Table 3. Total Direct and Indirect Effects, 1905-1935

Dependent Variable: Inter-Court Communication			
Independent Variables	Direct Effect	Indirect Effect	Total
cited's reports, 1870-1935	.28		.28
citing's reports, 1870-1935			
West's regions	.09		.09
signed legis. innov. diff.	.32		.32
signed popul. diff., 1890-1940		.36	.36
signed urban. diff., 1920		.23	.23
proximity		.18	.18
migration, 1910-1950	.31		.31

Table 3 shows, for the second period, the total direct and indirect effects on inter-court communication of the variables having significant paths in the model. Figure 3 displays the path analysis for the period 1940 to 1970. Two of the most important changes between the second and third periods are continuations of trends visible when the first period was compared to the second. Legal capital, as measured by the volume of reports, again declined in relative importance, and the relative effect of migration on inter-court communication again increased. In this period, migration is the strongest predictor of inter-court communication. Again, the migration that matters is the most recent, not the original migration of the nineteenth century. When the indicators of pre-1901 migration and 1950-1970 migration are both included in the

¹⁸ Data are available on request.

Figure 3. Path Analysis of Inter-Court Communication, 1940-1970



p less than .01 in all cases

equation, the latter is significantly related to inter-court communication, and the former is not.

The third major change from the second period is in the effects of urbanization, legislative innovativeness, and judicial professionalism. Urban-to-rural differences are, as before, related to legislative innovativeness. But now, legislative innovativeness is only indirectly related to inter-court communication. In this period, when both legislative innovativeness and judicial professionalism are in the equation, only judicial professionalism is significantly related to inter-court communication. It is difficult to tell whether these differences between the equations for 1905-1935 and 1940-1970 are the results of actual changes in the relationships between legislatures and courts, whether they result from changes in legislative behavior that are not captured by Walker's static index, or whether they result simply from the introduction in the model of a variable that directly reflects one aspect of the legislative-judicial relationship, namely, the standards of judicial professionalism set by the legislature.

Table 4 shows, for the third period, the total direct and indirect effects on inter-court communication of the variables having significant paths in the model. Because urbanization and population differences have indirect effects on judicial professionalism, the table shows the total direct and indirect effects on this variable as well.

Table 4. Total Direct and Indirect Effects, 1940-1970

Dependent Variable: Inter-Court Communication			
Independent Variables	Direct Effect	Indirect Effect	Total
cited's reports, 1901-1970	.21		.21
citing's reports, 1901-1970			
West's regions	.13		.13
signed legis. innov. diff.		.05	.05
cited's judicial professionalism	.10		.10
signed popul. diff., 1920-1960		.16	.16
signed urban. diff., 1940-1960		.04	.04
proximity		.28	.28
migration, 1950-1970	.44		.44
Dependent Variable: Cited's Judicial Professionalism			
Independent Variables	Direct Effect	Indirect Effect	Total
signed legis. innov. diff.	.48		.48
signed popul. diff., 1920-1960		.16	.16
signed urban. diff., 1940-1960	.13	.28	.41

VI. CONCLUSION

One might assume that, due to the increasing impact of federal law on the states, the nationalization of American legal education, and the increasing ease of inter-court communication, any cultural regionalism in state common law is minimal and declining. This analysis, however, reveals cultural regionalism to be an increasingly important factor in the communication of precedent among state supreme courts.¹⁹ Two explicit definitions of cultural regionalism were provided. One, proximity, represents a simple model of neighborliness. If regionalism were the result of a procedure in which a court seeking outside authority tended to look first to the decisions of neighboring courts, then proximity would be independently related to inter-court communication. But it is not. The other operational definition of regionalism, interstate migration, represents a more complicated and, at best, vaguely understood process. One possibility is that people carry culture when they move; that legal institutions, including appellate courts, respond to local culture; and that legal institutions, including appellate courts, communicate with one another about culturally appropriate solutions to legal problems. Another possibility is that the relationship between migration and inter-court communication is spurious. This would be the case if, partly due to regional ties between states, many things move the same way, people and precedents included.²⁰

¹⁹ The relationship between native white migration and interstate citing and the argument that the relationship demonstrates cultural regionalism in inter-court communication were first presented in Harris (1979). Canon and Baum (1981) cite this paper in their discussion of potential regionalism in the diffusion of tort policies, but do not mention this finding. Harris (1979) also reported relationships between interstate citing and legal capital, proximity, West's regions, legislative innovativeness, and judicial professionalism, and the lack of relationships between interstate citing and absolute differences in social ecology. The results concerning the effects of West's regional reporter system, legal capital, judicial professionalism, and migration have been replicated by Caldeira (1983).

A reader suggests that the migration of judges and lawyers might explain the relationship between migration and citing. This is unlikely. In order to totally explain the migration-citing relationship, both the relationship between general migration and judicial origins and the relationship between judicial origins and citing would have to be very strong. Glick and Vines (1973) have shown that state supreme court judges are overwhelmingly local in origin. The movement of judges and lawyers was probably most important in the first period, while migration is most important in the last period.

²⁰ Some readers may wonder whether leaving out a few "opinion leaders" would substantially change the results. The answer is no. The analysis presented in Harris (1979) included dummy variables for New York, California, and Massachusetts in similar regression equations. Those three courts are the most cited, and are the only ones far enough ahead of the pack to present any of the statistical problems associated with outliers. If the "leadership" of New York, California, and Massachusetts had strongly

Although the mechanism that relates migration and inter-court communication is unclear, it is clear that the relationship exists. It exists independently of proximity, and of the artificial regionalism of the West's reporters. It exists independently of the urban-rural differences in state legal cultures, which produce more and less innovative legislatures and more and less professional judiciaries. It exists independently of differences among the courts in the production of decisions and opinions. It exists independently of large-scale ecological differences among states, including differences in industrialization and population.

Nor is the relationship between migration and inter-court communication a decreasing residue of cultural regionalism established by the initial migration of whites into the frontier. Whether cultural regionalism in general in the United States is more the result of the initial migration or of the patterns of continuing migration cannot be settled without an inventory and weighing of all the components of regionalism. With respect to cultural regionalism in inter-court communication, however, the question can be answered. The relationship of inter-court communication to migration has increased, not decreased, between the mid-nineteenth and the mid-twentieth centuries. The patterns of migration that apparently influence inter-court communication are not the earliest, initial patterns; rather, they are the migration patterns of the contemporaneous state populations.

Harris (1982) showed that the structure of the interstate citation network changed in two ways between 1870 and 1970. In the late nineteenth century, the network was stratified primarily by differences in prestige or differences in the rates at which courts are cited by other states, and to a lesser extent by dependence or differences in the rates at which courts rely

influenced the results of the current paper, the results here would be very different from those of my earlier analysis, but they are not very different. In each period, the beta coefficients for migration, West's regions, and the citing court's legal capital are virtually the same; the coefficients for migration are slightly higher when the dummy variables are included. The institutional effects appear different, in that judicial professionalism does not significantly mediate the effect of legislative innovativeness in the last period when the dummy variables are included, but the relationship of these variables taken together to the whole model is the same. The greatest differences are in the coefficients for the cited court's legal capital, which are reduced from one-third to one-half when the dummy variables are included. This may be because the "leadership" of these three courts mediates the effect of legal capital: a large part of the reason they became opinion leaders is that they had a large head start in the production of decisions (California's head start was over the other Western courts, from which it receives the majority of its citations).

on out-of-state authority. In the early twentieth century, communication among the courts was relatively homogeneous, with all courts participating more as both senders and receivers. In the middle of the twentieth century, the structure of inter-court communication reflected a greater interaction between prestige and dependence. Prestige in the network had less of a national base, and individual ties between courts became more important.

Now these results can be more fully interpreted. In the models developed here, the effect of legal capital obtains equally for all of a court's communication relationships. Between the first period and the third, the effect of the cited court's legal capital declined from twice that of any other factor to half that of migration, suggesting that the reason national prestige differences declined in importance was that many courts developed sizeable stocks of legal capital and so could cite domestic precedent on most issues they confronted. The effect of interstate migration, on the other hand, is different for each tie in the network. The increase in the relative effect of migration between 1870 and 1970 suggests that an increase in the importance of cultural regionalism has tended to reduce the homogeneity of the network in the middle of the twentieth century.

Perhaps as important as the positive finding of cultural regionalism in the communication of precedent are the negative findings concerning ecological regionalism. Neither urbanization, nor industrialization, nor population was related to inter-court communication in the manner expected either if state supreme courts were to attempt to adapt the laws of similarly situated courts to their own state's ecological conditions or if the courts in ecologically similar states were to arrive independently at the same legal adaptations and thus agree on the law and subsequently communicate. In none of the three periods were greater absolute differences in urbanization, industrialization, or population associated with less inter-court communication. Apparently, state supreme courts have no special tendency to consult the decisions and opinions of courts in states in similar social and economic circumstances.

Urbanization and population are both indirectly associated with inter-court communication. The diffusion of precedent among state supreme courts tends to be from courts in urban states to courts in rural states and from courts in heavily populated states to those in sparsely populated states. With

respect to urbanization, these results are consistent with Fischer's theory of urban-to-rural cultural diffusion. When legislative innovativeness and judicial professionalism are controlled, however, the relationship between urbanization and inter-court communication is insignificant, suggesting that the effect of urbanization is mediated by differences between legislatures, or, more generally, by differences between state legal and political cultures.

The effect of population on inter-court communication is similarly mediated by other factors. Most important among these is the quantity of legal capital generated by the cited court. Courts in the more populous states publish more precedent material and consequently are more cited. It is interesting to note in this context that the legal capital of the citing court is only slightly related to inter-court communication when the other predictors are controlled. Canon and Baum (1981) suggest that the reason population differences are related to the diffusion of tort policies among the courts is that being located in a sparsely populated state restricts a supreme court's opportunities to innovate. If so, we would expect that a negative relationship between the amount of legal capital accumulated by a court and the rate at which it cited other courts would be a major element in explaining population's effect on inter-court communication; but it is of minor importance in the nineteenth century and is insignificant in the twentieth.

The other important factors in the explanation of population's effect are legislative innovativeness and, in the first two periods, migration. More populated states have more innovative legislatures, and until recently, differences in population were associated with migration from the more to less populated states. These results suggest that ecological differences among the states help determine the relationship between culture and the communication of precedent. Population, urbanization, and proximity affect but do not entirely determine cultural relations among states. It appears that it is through these cultural relations, as well as through the accumulation of precedent and the technology of case reporting, that the ecological differences considered here affect inter-court communication.

APPENDIX

Table A. Regression Equations for 1870-1900

(1) Dependent Variable: Inter-Court Communication, 1870-1900				
Independent Variables	Beta	B	Std. Er.	Sig.
cited's reports, pre-1901	.50	0.1047	0.0115	< .01
citing's reports, pre-1901	-.13	-0.0385	0.0131	< .01
signed legis. innov. diff.	.22	0.0343	0.0065	< .01
signed popul. diff., 1890	-.15	-0.0018	0.0008	.02
signed urban. diff., 1890	-.08	-0.0046	0.0023	.04
proximity	.04	2.9000	2.0688	.16
migration, 1870-1910	.23	2.3959	0.3670	< .01
(constant)		0.2535	1.0858	.82
R ² = .41				
Standard Error of Estimate = 14.78				
(2) Dependent Variable: Cited's Reports, pre-1901				
Independent Variable	Beta	B	Std. Er.	Sig.
signed popul. diff., 1890	.61	0.0353	0.0017	< .01
Control Variables				
signed legis. innov. diff.	.04	0.0293	0.0211	.17
migration, 1870-1910	.18	8.9348	1.4072	< .01
(constant)		81.4594	2.5205	< .01
R ² = .53				
Standard Error of Estimate = 62.99				
(3) Dependent Variable: Citing's Reports, pre-1901				
Independent Variable	Beta	B	Std. Er.	Sig.
signed popul. diff., 1890	-.60	-0.0250	0.0015	< .01
Control Variables				
signed legis. innov. diff.	-.11	-0.0590	0.0182	< .01
migration, 1870-1910	.19	6.8038	1.2153	< .01
(constant)		86.3954	2.1768	< .01
R ² = .34				
Standard Error of Estimate = 54.40				

Table A, continued

(4) Dependent Variable: Signed Legislative Innovativeness Difference				
Independent Variables	Beta	B	Std. Er.	Sig.
signed popul. diff., 1890	.23	0.0176	0.0044	< .01
signed urban. diff., 1890	.59	0.2189	0.0098	< .01
Control Variables				
cited's reports, pre-1901	.05	0.0638	0.0647	.32
citing's reports, pre-1901	-.12	-0.2142	0.0739	< .01
migration, 1870-1910	-.01	-0.5548	1.9286	.77
(constant)		-2.9264	6.0460	.63
R ² = .53				
Standard Error of Estimate = 83.65				

(5) Dependent Variable: Migration, 1870-1910				
Independent Variables	Beta	B	Std. Er.	Sig.
proximity	.32	2.0976	0.1943	< .01
signed popul. diff., 1890	.33	0.0004	0.0001	< .01
Control Variables				
cited's reports, pre-1901	.22	0.0045	0.0011	< .01
citing's reports, pre-1901	.10	0.0027	0.0013	.04
signed legis. innov. diff.	.03	0.0005	0.0005	.36
(constant)		-0.1961	0.1096	.07
R ² = .35				
Standard Error of Estimate = 1.49				

Table B. Regression Equations for 1905-1935

(1) Dependent Variable: Inter-Court Communication, 1905-1935				
Independent Variables	Beta	B	Std. Er.	Sig.
cited's reports, 1870-1935	.28	0.0237	0.0042	< .01
citing's reports, 1870-1935	-.01	-0.0007	0.0041	.87
West's regions	.09	3.0885	1.0236	< .01
signed legis. innov. diff.	.32	0.0331	0.0052	< .01
signed popul. diff., 1890-1940	.10	0.0005	0.0003	.11
signed urban. diff., 1920	-.06	-0.0023	0.0018	.20
proximity	-.07	-3.0295	1.4809	.04
migration, 1910-1950	.31	2.7690	0.3043	< .01
(constant)		3.1264	0.7144	< .01
R ² = .48				
Standard Error of Estimate = 9.09				

Table B, continued

(2) Dependent Variable: Cited's Reports, 1870-1935				
Independent Variable	Beta	B	Std. Er.	Sig.
signed popul. diff., 1890-1940	.71	0.0409	0.0019	< .01
Control Variables				
signed legis. innov. diff.	-.09	-0.1142	0.0381	< .01
migration, 1910-1950	.13	13.8202	2.8940	< .01
(constant)		162.2375	4.1949	< .01
R ² = .51				
Standard Error of Estimate = 104.87				
(3) Dependent Variable: Citing's Reports, 1870-1935				
Independent Variable	Beta	B	Std. Er.	Sig.
signed popul. diff., 1890-1940	-.58	-0.0303	0.0019	< .01
Control Variables				
signed legis. innov. diff.	-.08	-0.0844	0.0388	.03
migration, 1910-1950	.15	13.8172	2.9451	< .01
(constant)		165.4060	4.2691	< .01
R ² = .36				
Standard Error of Estimate = 106.72				
(4) Dependent Variable: West's Regions				
Independent Variable	Beta	B	Std. Er.	Sig.
proximity	.41	0.5203	0.0432	< .01
(constant)		0.1104	0.0128	< .01
R ² = .16				
Standard Error of Estimate = .33				
(5) Dependent Variable: Signed Legislative Innovativeness Difference				
Independent Variables	Beta	B	Std. Er.	Sig.
signed popul. diff., 1890-1940	.34	0.0162	0.0021	< .01
signed urban. diff., 1920	.71	0.2653	0.0080	< .01
Control Variables				
cited's reports, 1870-1935	-.10	-0.0837	0.0295	.01
citing's reports, 1870-1935	.02	0.0185	0.0291	.53
migration, 1910-1950	-.01	-0.9794	1.8047	.59
(constant)		0.6732	4.8024	.89
R ² = .72				
Standard Error of Estimate = 64.21				

Table B, continued

(6) Dependent Variable: Migration, 1910-1950				
Independent Variables	Beta	B	Std. Er.	Sig.
proximity	.47	2.3564	0.1587	< .01
signed popul. diff., 1890-1940	.18	0.0001	0.0000	< .01
Control Variables				
cited's reports, 1870-1935	.23	0.0022	0.0004	< .01
West's regions	.06	0.2428	0.1248	.05
signed legis. innov. diff.	-.03	-0.0003	0.0004	.48
(constant)		-0.0944	0.0814	.25

R² = .38
Standard Error of Estimate = 1.11

Table C. Regression Equations for 1940-1970

(1) Dependent Variable: Inter-Court Communication, 1940-1970				
Independent Variables	Beta	B	Std. Er.	Sig.
cited's reports, 1901-1970	.21	0.0188	0.0051	< .01
citing's reports, 1901-1970	-.03	-0.0025	0.0046	.59
West's regions	.13	5.5456	1.3617	< .01
signed legis. innov. diff.	.02	0.0032	0.0066	.63
cited's judicial professionalism	.10	0.0461	0.0171	< .01
signed popul. diff., 1920-1960	.09	0.0004	0.0003	.25
signed urban. diff., 1940-1960	.02	0.0013	0.0028	.64
proximity	-.14	-7.7008	2.0440	< .01
migration, 1950-1970	.44	5.2915	0.4563	< .01
(constant)		-3.2456	1.8500	.08

R² = .40
Standard Error of Estimate = 12.22

(2) Dependent Variable: Cited's Reports, 1901-1970				
Independent Variable	Beta	B	Std. Er.	Sig.
signed popul. diff., 1920-1960	.67	0.0304	0.0014	< .01
Control Variables				
signed legis. innov. diff.	-.26	-0.3658	0.0495	< .01
cited's judicial professionalism	.36	1.7564	0.1429	< .01
migration, 1950-1970	.12	15.3661	3.3442	< .01
(constant)		-10.0071	17.2295	.56

R² = .56
Standard Error of Estimate = 115.02

(3) Dependent Variable: Citing's Reports, 1901-1970

Independent Variable	Beta	B	Std. Er.	Sig.
signed popul. diff., 1920-1960	-.63	-0.0300	0.0016	< .01
Control Variables				
signed legis. innov. diff.	-.25	-0.3766	0.0548	< .01
cited's judicial professionalism	.33	1.6724	0.1580	< .01
migration, 1950-1970	.14	19.3600	3.6975	< .01
(constant)		2.2038	19.0499	.91

R² = .51

Standard Error of Estimate = 127.17

(4) Dependent Variable: Signed Legislative Innovativeness Difference

Independent Variables	Beta	B	Std. Er.	Sig.
signed popul. diff., 1920-1960	.34	0.0108	0.0010	< .01
signed urban. diff., 1940-1960	.59	0.2903	0.0127	< .01
Control Variables				
cited's reports, 1901-1970	-.04	-0.0308	0.0212	.15
migration, 1950-1970	.02	1.9110	2.1572	.38
(constant)		-5.5316	5.0428	.27

R² = .64

Standard Error of Estimate = 73.08

(5) Dependent Variable: Cited's Judicial Professionalism

Independent Variables	Beta	B	Std. Er.	Sig.
signed legis. innov. diff.	.48	0.1392	0.0134	< .01
signed popul. diff., 1920-1960	-.32	0.0030	0.0004	< .01
signed urban. diff., 1940-1960	.13	0.0193	0.0061	< .01
Control Variables				
cited's reports, 1901-1970	.47	0.0958	0.0078	< .01
migration, 1950-1970	.02	0.5103	0.7888	.52
(constant)		97.3373	1.8443	< .01

R² = .44

Standard Error of Estimate = 26.71

Table C, continued

(6) Dependent Variable: Migration, 1950-1970				
Independent Variables	Beta	B	Std. Er.	Sig.
proximity	.52	2.3890	0.1407	< .01
signed popul. diff., 1920-1960	.09	0.0000	0.0000	.06
Control Variables				
cited's reports, 1901-1970	.24	0.0018	0.0003	< .01
West's regions	.11	0.3800	0.1097	< .01
signed legis. innov. diff.	-.05	-0.0005	0.0004	.27
cited's judicial professionalism	.02	0.0009	0.0014	.51
(constant)		-0.2212	0.1497	.14

R² = .41
Standard Error of Estimate = .99

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