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American Sociological Review, Vol. 36, No. 3. (Jun., 1971), pp. 451-461.

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VARIATION IN COUNTY SIZE: A THEORY OF SEGMENTAL GROWTH

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American Sociological Review 1971, Vol. 36 (June):451-461

Durkheim argued that improvements in transportation or further increases in the density of a population would lead to increased division of labor and to the effacement of segmental (territorial) types of organization. This paper develops the thesis that segmental growth—an increase in the number of segmental units—is the result of expansion of the settlement area under constant conditions of transportation. Two recent models of geopolitical structure, developed by Boulding and Stinchcombe, are shown to be related to this thesis and are made the basis for a formal representation of it. The thesis is then used to explain a particular case of segmental growth—the historical process of dividing states into county jurisdictions. Existing variation in county size is explained by the termination of segmental growth following the introduction of the automobile.

COUNTIES in the United States vary considerably in size. The largest, San Bernardino County in California, covers 20,131 square miles; the smallest, New York County, covers only 22 square miles. The so-called "independent cities" in Virginia, which have the legal status of counties, are as small as one square mile each. The average size county in the United States is 961 square miles; median size is about 600 square miles, and the mode is about 500 square miles (Anderson, 1945:24). The

purpose of the research reported here was to investigate this tremendous variation in county size and to explain it.

It is appropriate to ask whether or not an explanation of county size variations has any significance in terms of sociological theory. In fact, the explanation developed here is directly related to the theory of social change developed by Durkheim (1933) in his classic work, *The Division of Labor in Society*. In that work, he distinguishes two fundamental types of social

organization, the "segmental type" and the "organized type." The segmental type consists of a "system of segments homogeneous and similar to each other" (1933:181), and there are two subtypes: those based upon consanguineous groupings (e.g., clans, tribes) and those based upon territorial units (e.g., counties, provinces, etc.). Durkheim's main interest, however, seems to lie with the latter—"The bulk of the population is no longer divided according to relations of consanguinity, real or fictive, but according to the division of territory. The segments are no longer familial aggregates, but territorial circumscriptions" (1933:185). Different levels of territorial units coexist in an area, and their combination constitutes society: "Thus it is that all peoples who have passed beyond the clan-stage are organized in territorial districts (counties, communes, etc.) which . . . connected themselves with other districts of similar nature, . . . which, in their turn, are often enveloped by others, still more extensive (shire, province, department), whose union formed the society" (1933:186).

The primary argument of Durkheim's work is that this system of territorial units is gradually being replaced by the organized type, based on the division of labor. "It is a general law," writes Durkheim (1933:187), "that partial aggregates which participate in a larger aggregate see their individuality becoming less and less distinct." The reason for this is that functions originally carried out within the partial aggregates begin to be carried out at the level of the larger aggregate, under pressure of competition. In the process, each of the functions becomes more specialized as the reoriented set of functions becomes more interdependent. "Territorial divisions are thus less and less grounded in the nature of things, and consequently, lose their significance" (1933:187). The end result of this process is the "organized type," constituted "not by a repetition of similar, homogeneous segments, but by a system of different organs, each of which has a special role, and which are themselves formed of differentiated parts" (1933:181). The "progressive preponderance of organic solidarity" results in and from the "effacement of the segmental type." Social change thus con-

sists essentially of an increased division of labor with greater functional interdependence as territorial divisions become increasingly artificial.

Segmental Growth

Social change, in this form, has received considerable attention from sociologists; it is practically the definition of social change for many of us. But social change in the form of the development of the segmental type itself—"segmental growth": adding more units similar in structure to those already in existence—to my knowledge has received very little attention. The significance of this lack of attention can be seen in Nisbet's comment on the relevance of the segmental type to Durkheim's other work: ". . . Durkheim never went back, in later studies, to any utilization of the distinction between the two types of solidarity, nor to the division of labor as a form of cohesion. . . ." (Nisbet, 1966:86).

That counties are segmental structures is evident from Durkheim's own consideration of them in the passages quoted above. That current variation in county size may be related to the phenomenon of segmental growth, however, may not be so evident. The connection arises from the fact that *current* variation in county size is the product of a *historical* process—the process of dividing states into county jurisdictions over time, in almost every case by dividing larger counties into smaller ones. A compilation of the dates of creation of counties in the United States (e.g., Kane, 1962) shows that no state divided its jurisdiction into its present-day counties all at once. The first counties in the U.S. were created in Virginia in 1634; the last one added to that state was created in 1880. The same is essentially true for the other states: in the beginning a set of small counties is created in part of the state, the remainder of the state consisting of much larger counties. In time, the larger ones are subdivided, until the terminal number is reached. This division process—adding more counties to those already in existence within a state—constitutes segmental growth. The same division process, by going more or less to completion, produced the currently observable variation in county size.

The historical process is illustrated in Table 1, which shows the accumulation of counties in each state from 1790 to the present. The table was prepared by counting, in the census volumes, the number of counties in each state or territory during each census year. The states (indicated by their abbreviations) are arranged in the order in which they entered the Union; the census year by which statehood had been achieved is indicated by the line running through the table. It is evident that some counties were formed by colonial and territorial gov-

ernments; some present-day states, in fact, were at one time merely counties of other states. Vacant cells indicate that no further change in the number of counties was indicated, that the division process of segmental growth had come to an end. It may be noted that two counties in Georgia were, in 1932, consolidated with a third to reduce the number in that state.

It may be argued that the existing variation in county size no longer needs explanation, or rather that it has just been explained as the product of the historical

Table 1. Accumulated Number of Counties, by State and Census Year, in Order of Admission (Indicated by the Line Through the Table).

State	Census Year (1790-1950)																
	90	00	10	20	30	40	50	60	70	80	90	00	10	20	30	40	50
Del.	3																
Pa.	22	35	42	51	51	54	63	65	66	67							
N.J.	13	13	13	13	14	18	20	21									
Ga.	11	24	38	47	76	93	95	132	132	137	138	138	147	155	161	159	
Conn.	8																
Mass.	11	12	12	13													
Md.	19	19	19	19	19	20	20	21	22	23							
S.C.	20	25	28	28	29	29	29	30	31	33	35	40	43	46			
N.H.	5	5	6	6	8	8	10										
Va.	71	75	77	78	79	88	92	96	97	98							
N.Y.	15	30	43	50	56	58	59	60	60	60	60	61	61	62			
N.C.	54	59	61	61	63	67	78	86	90	94	96	97	98	100			
R.I.	5																
Vt.	7	11	12	13	13	14											
Ky.	9	42	54	67	82	89	100	109	115	117	119	119	119	120			
Tenn.	8	18	38	52	62	71	79	84	85	94	95						
Ohio		7	36	59	73	79	87	88									
La.			20	26	31	38	47	48	53	58	59	59	60	64			
Ind.		2	4	35	64	87	91	92									
Miss.		3	11	17	26	56	59	60	65	74	75	75	79	82			
Ill.		3	2	19	51	87	99	102									
Ala.		1	3	24	36	49	52	52	65	66	66	66	67				
Maine	5	6	8	9	10	13	13	16									
Mo.			5	15	32	62	100	113	114								
Ark.			1	7	23	39	51	55	61	74	75						
Mich.		1	4	5	13	32	43	62	76	77	82	83					
Fla.					16	20	28	37	39	39	45	45	47	54	67		
Texas							80	133	144	210	238	244	246	253	254		
Iowa						18	49	97	98	99							
Wisc.				2	3	22	31	58	58	63	68	70	71				
Calif.							27	44	50	52	53	57	58				
Minn.							9	64	72	78	80	82	86	86	87		
Ore.							8	19	21	23	31	33	34	36			
Kansas								41	64	103	105						
W. Va.		10	13	16	21	23	28	42	50	53	54	55					
Nevada									3	14	15	14	14	15	17		
Neb.								36	55	70	90	90	92	93			
Colo.									21	31	55	57	60	63			
N. Dak.										21	41	39	49	53			
S. Dak.										13	48	56	56	64			
Mont.										11	11	16	24	28	51	56	
Wash.							2	19	23	25	34	36	38	39			
Idaho									9	13	16	21	23	44			
Wyo.										5	7	12	13	14	21	23	
Utah								7	17	21	23	25	27	27	29		
Okla.											8	75	76	77			
N. Mex.								7	10	13	12	14	19	26	29	31	31
Ariz.									1	4	7	10	13	13	14		32

process of jurisdictional division. Explanations of this type, referred to as "genetic explanations" by Brown (1963:47-58), are essentially "descriptive"—they explain the present by describing a development which occurred in the past. As Clark (1954:71) puts it: "The genetic approach focuses attention on processes, for whatever interests us in the contemporary scene is to be understood only in terms of the processes at work to produce it." But such explanations often only serve as the basis for restating the original question in historical terms. Granted that present variation is the product of an historical division process, we may ask why the process occurred as it did—why did segmental growth take place? And, in addition, why did the process terminate so abruptly, throughout the country, between 1920 and 1930? The only county created in the United States after 1925 was Los Alamos County, New Mexico, in 1949 (Kane, 1962:332). Regardless of the differences between states with respect to the beginning dates of territorial subdivision, and regardless of the extent to which states had subdivided their larger counties into smaller ones, they all terminated the process during the 1920s.

Causes and Conditions

Book I of *The Division of Labor* by Durkheim is primarily concerned with genetic explanation. He explains specialization and interdependence in modern society as the product of twin historical processes: the progressive preponderance of organic solidarity and the simultaneous effacement of the segmental type. If we ask why these historical processes occurred, we must turn to Book II for Durkheim's answer. Further development of the division of labor (further effacement of the segmental type) was due, he argued, to further *concentration of the population* and/or to further *improvements in transportation or communication*. If, then, we ask why segmental growth should occur, the answer must be in terms precisely the opposite of those which Durkheim used to explain the effacement of the segmental type, namely, to the *dispersal* of population under *constant* conditions of transportation and communication.

Applying this general explanation of segmental growth to the specific phenomenon of subdividing states into counties, it would follow that new counties would be created as the settlement area within a state or territory expanded. How much expansion of the settlement area would be required in order to necessitate the creation of new counties? It is here that the connection between the settlement area and the transportation technology becomes important. Assuming with Hawley (1950:302) that "The diurnal cycle . . . constitutes the primary unit in the rhythm of activity"—that people prefer to return every evening to their place of residence—a county's boundaries would have to be such that its citizens would live close enough to their county seat in order to conduct whatever business they might have there and still be able to return home in the evening. The distance involved here would depend directly on the system of transportation which people had available to them. When a sufficient number of people had settled in an area lying beyond the limit so imposed, provision of county government services would require creation of a new county. Expansion of the settlement area, then, under constant conditions of transportation, could have led to the creation of new counties; and, since new counties could only be created by subdividing counties with nominally large jurisdictions, the same conditions would have led to a reduction in county size variation (i.e., to a reduction in the number of large counties in a state).

As to the termination of the process of segmental growth, we would expect this to occur, generally, whenever there was no further dispersal of population or when improvements in transportation could offset whatever dispersal might subsequently occur. It will be recalled that the process of further dividing states into counties came to an end throughout the United States by 1930. The coincidence of this date with the period during which the automobile was widely introduced suggests that it was a sufficient improvement in the system of transportation to terminate the process of further subdividing whatever large counties remained at that time. We get some idea of the impact of the automobile, with respect to the areal size of the field of daily

movement, in Hawley's (1950:352) comparison between the velocity of human or horse-drawn transportation systems and that of motor-driven systems: 15–20 miles per day for the former, 250–600 miles per day for the latter. For the extremes, time-cost is reduced by a factor of forty with the newer technology. The automobile, then, seems to have been the agent which “froze” county boundaries where they were in the 1930s, revealing through the distribution of large and small counties the extent of population movement up to that time.

The argument thus far has tended to view counties from the perspective of the dispersed citizens and their ability to conduct business at the county seat under conditions imposed by the diurnal cycle and the transportation technology available to them. Equally important, particularly during early periods of settlement, was the ability of the government at the county seat to enforce its regulations throughout its jurisdiction (e.g., the ability of the assessor to visit property within the county, or the ability of the sheriff to enforce payment of taxes within the county). Presumably, the same diurnal cycle, which—under the given transportation conditions—limited the mobility of citizens, put limits on the movement of these officials as well. As the settlement area of a nominally large county expanded beyond these limits, it would be to the advantage of the county officials to recommend creation of new counties to serve the outlying settlements. There is evidence (Porter, 1947; Updyke, 1913; James, 1921; Fairlie and Kneier, 1930) that the earliest counties—those created during the colonial period and which formed the basis for all subsequent development of county government—were created precisely because of the difficulty of administering justice from the General Courts of the Colonial capitals under existing conditions of transportation.

A Formal Model of Governmental Effectiveness

The problem of administering justice over a large area under limiting conditions of transportation has recently been given some attention by Boulding (1968:1111–1123) and Stinchcombe (1968:158–163 & 216–231). Their ideas are substantially iden-

tical though their terminologies vary somewhat. Together, their notions provided the basis for construction of the following model of governmental effectiveness—a model which gives graphic representation to the theory of segmental growth and which, at the same time, affords an opportunity to view counties as *governmental* forms of social organization.

A government is effective to the extent that it can control the behavior of its citizens in all relevant respects, that is, to the extent that it can enforce its regulations within its jurisdiction, over local opposition if need be. It should be noted “effectiveness” does not refer to the adequacy—moral or otherwise—of governmental regulations; the only reference here is to the government's ability to enforce its regulations, whatever they may be. The probability that a regulation will be backed up by force if necessary, according to Stinchcombe (1968: 162), is a measure of the *legitimacy* of that regulation. Boulding (1968:1112) referred to a government's ability to thus “legitimize” its regulation as the *threat capability* of the government; the degree to which people believe in a government's threat capability he called its *threat credibility*. The importance of this last concept lies in the fact that, in order to regulate the behavior of individuals under normal circumstances, a government's threat capability must enter into individual decision-making as a subjective belief.

Threat capability, Boulding argues, has a cost of transport which increases as a function of the distance over which that capability must be moved. Thus threat capability diminishes with distance from the origin of the threat. And, since threat capability and credibility are related (Boulding, 1968: 1123n), threat credibility also diminishes with distance from the origin of the threat. This decline in threat credibility per unit of distance from the origin represents the government's *loss of strength gradient*. At a certain distance threat credibility will decline to the point where it can no longer control behavior. The amount of threat credibility which is just sufficient to control behavior for governmental purposes may be called its *critical value*. Stinchcombe (1968: 226) refers to those areas in which threat credibility (his word is “vulnerability”) is

lower than its critical value as *bush, wilderness, or frontier*.

Figure 1A is my attempt to give graphic representation to the Boulding-Stinchcombe model. In the Figure, S is the distance from O, the origin of the threat, T is the threat credibility of the government located at O. The critical value M occurs on the loss of strength gradient QR at the distance ON. It has been assumed that there is some distance PQ within which threat credibility does not decline, reflecting the possibility that the origin of the threat may be an area rather than a point. If we let L represent the nominal boundary of the government at O, then Figure 1A describes the situation in which a government claims jurisdiction over areas which it cannot govern, namely, the frontier NL. It may be noted that although the Figure is constructed on the basis of linear distance, it can be made to represent two-dimensional areal patterns by rotating the S-axis about the origin (and with it, PQR, L, M, and N).

Now suppose that the population, which

is nominally under the jurisdiction of the government at O, gradually expands its settlement area into the frontier NL. Under the assumed conditions, only two alternatives are available for providing effective government in the frontier. Either the seat of government must be relocated, or a second government will have to be created for those in the frontier. As Pierson (1968: 51) has suggested, however, institutions do not move easily; and, in any event, there are limits to the application of this alternative—the frontier absorbed by the government would be matched by the frontier created in the area newly removed from governmental control (i.e., on the “negative side” of the S-axis, not shown). It seems reasonable to expect, then, that the second alternative will be the more probable: a new government will be created as the population moves into the frontier.

Figure 1B illustrates this condition. Q_1R_1 is the loss of strength gradient for the government located at O_1 as in Figure 1A. Q_2R_2 is the loss of strength gradient for the newly created government located at O_2 (it rotates, for areal patterns, about the O_2P_2 axis). The area represented by N_2N_1 would be what Stinchcombe (1968:226) called *disputed border territory*, except that the boundary L_{12} has been created. To the extent that the boundary is legitimate, in the sense indicated above, it has the effect of reducing threat credibility to zero, regardless of the overlapping of objective threat capabilities. This can be seen by comparing Q_1R_1 with Q_1KL_{12} . The original boundary L in Figure 1A has now become the boundary L_2 for the government at O_2 . The originally large jurisdiction O_1L_2 has been reduced to the small jurisdiction O_1L_{12} by the creation of a second government at O_2 following the movement of population into the new settlement area.

Returning to Figure 1A, suppose that something happens which reduces the cost (particularly the time-cost) of transporting threat capability. The effect of such a reduction would be to make the loss of strength gradient less steep, so that the critical value of threat credibility would lie further from the origin of the threat than it did when transport costs were higher. This condition is illustrated in Figure 1C, in

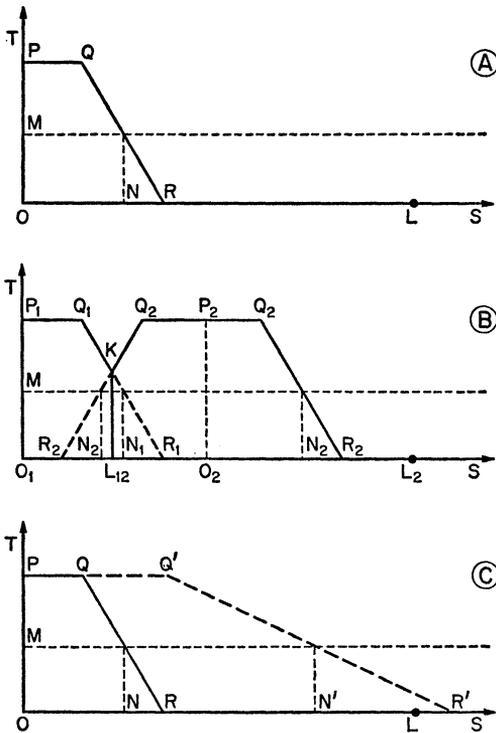


FIG. 1: Graphic Representation of the Boulding-Stinchcombe Model of Governmental Effectiveness.

which Q'R' represents the new loss of strength gradient. The distance ON' defines the area which can now be governed effectively from the origin O, and the area defined by NN' has been subtracted from the frontier. Thus, the movement of population into NN' would no longer necessitate the creation of a new government.

We can illustrate the Durkheim-Boulding-Stinchcombe model for a hypothetical case. Figure 2A shows a hypothetical state boundary with several smaller counties already formed in the southeastern corner of the state. County seats are indicated by "+" marks; settled areas are indicated by shading. At this point in time there is considerable variation in county size, produced by the very large counties to the north and west. In Figure 2B, the settlement area has expanded into the frontier, beyond the range of governmental effectiveness of existing counties; those living in the outlying settlement area, though nominally citizens of existing counties, are without an effective county government. This situation is remedied in Figure 2C with the creation of new counties in the outlying area. As population expands further, still more counties will be created, unless improvements in transportation no longer make this necessary. The result will be more or less variation in county size, depending upon the extent of settlement and the date of transportation improvement.

Report of Research Findings

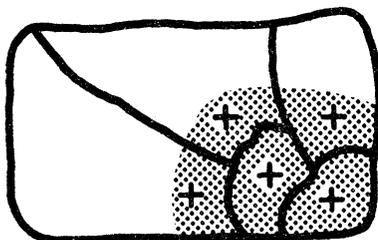
We turn from the hypothetical case to actual historical cases with this general hypothesis: variation in county size within a state (i. e., the presence of large counties in addition to the more typical small counties) is a function of the extent to which a state was settled prior to the general improvement in transportation which occurred with the introduction of the automobile around 1930. If the area of a state was completely settled prior to 1930, no large counties will remain; the state's counties will be uniformly small. If the state was but partially settled by that time, considerable variation in county size, produced by the remaining large counties, will be present. Furthermore, prior to 1930, where variation in county size is present within a state, the

smaller counties will be in the areas of earlier settlement.

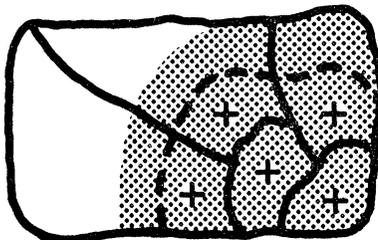
Testing the empirical accuracy of these expectations was relatively simple, compared to the task of reporting the results. Ideally, such a report would consist of a series of maps (a filmstrip?) showing all changes in the location of county boundaries and all changes in the distribution of population, from the earliest days of the colonial period up to the present. Obviously, such a series of maps, even if they were available, cannot be reproduced here (though a number of such maps are shown in Stephan, 1970a:61-92). For this reason, and for the reason that the requisite data are not fully available, the present report will fall far short of the ideal.

Data on the distribution of population

A. INITIAL CONDITIONS



B. SETTLEMENT EXPANSION



C. SEGMENTAL GROWTH

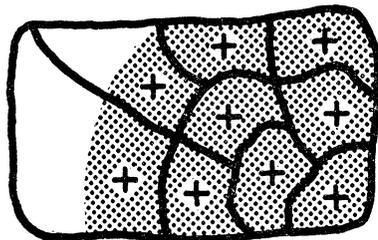


FIG. 2: Illustration of the Boulding-Stinchcombe model applied to a Hypothetical Case

during the colonial period, from 1625–1790, are available (Friis, 1968), but the earliest year for which there is a map of county boundaries in the United States (cf. Friis, 1968) is 1790. This map, based upon those produced by Rossiter (1909), is reproduced in a slightly modified form in Figure 3. It was modified to this extent: for the state of South Carolina, parish boundaries have been used, instead of county boundaries. The reason for this is that South Carolina had no counties, nominally, until the Reconstruction Period. In 1790, parishes performed the functions which elsewhere were performed by counties; hence, it seemed appropriate to indicate their boundaries (from Wallace, 1961:166) in Figure 3.

From 1790 to the present, data on population distribution has, of course, been made available by the Bureau of the Census (convenient compilations in cartographic form may be found in Paullin, 1932, or Lord and Lord, 1953). But maps of county boundaries in the United States are not available between 1790 and 1840. For this period one must rely on the maps of individual states, maps which lie scattered throughout numerous journals of state and local history

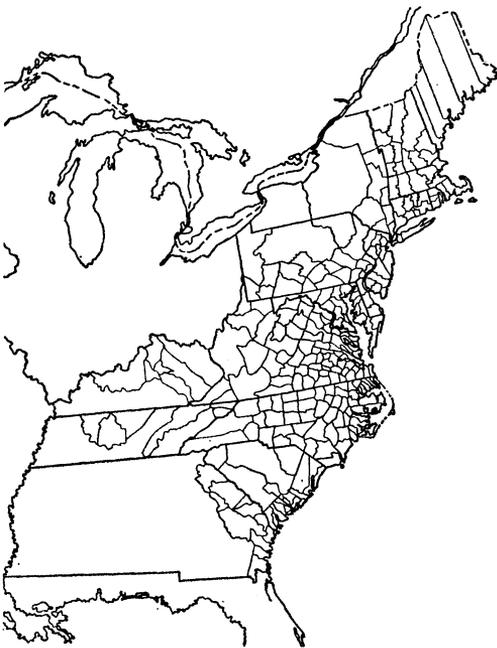


FIG. 3: Location of County Boundaries in the United States in 1790 (Adapted from Friis, 1968).

and which, together, still do not form a complete set. From 1840 to the present, however, maps are available for every census year, by special order from the Census Bureau.

The maps thus obtained, limited as they are, afford ample opportunity to test the adequacy of the hypotheses derived from the Durkheim-Boulding-Stinchcombe model. Referring again to Figure 3, the population maps (which cannot be reproduced here) make it clear that the heaviest concentrations of population lie in the areas along the Atlantic Coast with the smaller counties. Moving westward, the counties become larger as the population becomes less concentrated. The two smaller counties in the center of Kentucky are located at the site of a new settlement nucleus; the large counties in northwestern Pennsylvania and New York, and in northern Vermont and New Hampshire, reflect an almost total lack of settlement; Maine is settled only along the coast. By 1840, almost all of this area has been settled and very few larger counties remain. The process of subdivision has spread into the south and midwest, reflecting again the hypothesized relation between county size and population concentration. By 1870, smaller counties have been formed in the settled areas of Washington, Oregon, and California; around the settlement nuclei of Salt Lake City, Denver, and Santa Fe; and in the settled areas of northern Florida, southern Minnesota, eastern Kansas, Nebraska, and Texas. By 1900 all the states show some areas of population concentration coinciding with their areas of smaller counties; and those states which are not fully settled show larger counties in the areas which remain unsettled.

The situation in 1930, at the time the automobile became widely available, is described in the summary shown in Table 2. For purposes of tabulation, a "large" county was defined as any county of more than 2,000 square miles (see Anderson, 1945: 24). Similarly, "settlement" was defined by a population concentration of at least six persons per square mile. Any state which, in 1930, showed *no* unsettled area under this definition was classified as "completely settled." Those which showed *any* unsettled areas within their boundaries were classified

Table 2. Extent of Settlement (6 or More Persons per Square Mile) As a Determinant of County Size Variation.

Large Counties (2,000 or More Square Miles)	Extent of Settlement	
	Complete	Partial
Some Present	0	20
None Present	25	3

as "partially settled." The latter category included Arizona, California, Colorado, Florida, Idaho, Kansas, Louisiana, Maine, Michigan, Minnesota, Montana, Nebraska, Nevada, New Mexico, New York, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming. Of these, only three—Kansas, Louisiana, and Michigan—did not have "large" counties (though each of them had at least ten counties of 1,000 square miles or more).

In the years following 1930, the area of "settlement" continued to expand (some previously settled areas, incidentally, became "unsettled" through rural depopulation). Yet, as Table 1 makes clear, the process of division, which until 1930 had produced new counties as new areas were settled, came to an end. The relation between population distribution and county size—a relation which seems to have obtained for three centuries—broke down under the influence of the automobile. If change in a social system can be described in terms of the creation, transformation, or extinction of *relationships* between social variables (Stephan, 1970b: 225), then the case reported here is certainly a striking instance of it.

Reconsideration of Durkheim

But is this the kind of change which Durkheim anticipated in his *Division of Labor*? Has the introduction of the automobile led to the "effacement of the segmental type"—to the elimination of counties as a form of social organization? In two states, Connecticut and Rhode Island, apparently it has; they have abolished counties as units of local government (United States, 1967:15), although county *areas* remain for purposes of statistical enumeration.

This amounts to consolidation at the state level. In two analogous units of segmental organization—the parishes of rural churches and the districts of rural school systems—there has been considerable territorial consolidation attributed, respectively, to the automobile and the school bus (Rogers, 1960:212 and 235). And there evidently has been considerable *pressure* for county consolidation since the introduction of the automobile (cf. Porter, 1922; Kilpatrick, 1930; Bromage, 1933; Lancaster, 1937; Anderson, 1945; Wager, 1950; Rogers, 1960). Whether or not this pressure will be successful in the future is not deducible from the model developed here (it does not, for example, take into account the political self-interest of county officials and employees, or the inertia of beliefs and values which Ogburn labelled "cultural lag").

What is clear, however, is that there are alternatives to the "effacement of the segmental type"—alternatives which Durkheim did not specify in his theoretical formulation. For one, there is simply the *termination of segmental growth* (the condition holding most generally throughout the United States since the 1930s). For another, there is *enlargement of the segmental units* (which would be the case if small counties were simply consolidated into larger counties). Neither of these alternatives necessarily imply "effacement of the segmental type." Neither do they result in the development of functional specialization—division of governmental labor—at the state level. Under either alternative, counties remain as social realities in the collective consciousness.

Summary and Conclusions

The research reported here was intended to explain county size variation in the United States. The basis of the explanation was Durkheim's theory of segmental growth. Implicit in his *Division of Labor*, the theory was given explicit formulation in this report; it was also shown to be related to certain geopolitical theories developed by Boulding and Stinchcombe, theories which suggested the model of governmental effectiveness developed here. The assumptions underlying application of the Durkheim-Boulding-Stinchcombe model seem to be: (1) that the

functions of county government (which remained essentially the same from the beginning—cf. Porter, 1947:1) occasionally required the *movement* of people between the county seat and their residences in the county; (2) that the diurnal cycle imposed *time* limits on such movement; (3) that the existing horse-and-buggy transportation technology imposed limits on the *velocity* of such movement; and (4) that these time and velocity limits determined the *distance* over which such movement could occur, thereby setting limits on the *area* which a county seat could serve. The resulting hypothesis was that new counties would be created as the settlement area expanded beyond the range of governmental effectiveness of existing counties—until the introduction of the automobile terminated the division process, producing the variation in county size which is presently observable. The data reported (and referred to) confirmed this expectation, and the theory of segmental growth appears to have been supported.

It is interesting to note in conclusion that, at the outset of this research, there was no assurance that the segmental growth theory would hold. For example, in writing to the Census Bureau for the requisite county outline maps, the author mentioned that he hoped to develop a “demographic-ecological” explanation of county size variations. The Chief of the Geography Division (in a letter to me dated April 4, 1969) expressed the following opinion: “For whatever it is worth to you, it is our opinion that the explanation of county boundaries may be more political than demographic-ecologic.” He was referring, of course, to a fact well-attested in the state history journals—that the *precise* location of county boundaries has often been an object of political manipulation (for example, in the interest of prominent landowners, or for purposes of representation in state legislatures). This difference of opinion actually reflects a more fundamental difference of perspective. To the historian, or the geographer perhaps, the object of investigation may properly be to determine the unique set of circumstances which surrounded the precise location of a particular boundary (e.g., the political anecdote which explains its location). The sociological perspective, on the other hand, is oriented

specifically toward asking questions about *generalized patterns* of human behavior. In the present case, the pattern involved over 3,000 counties and took some 300 years to unfold; it encompassed a vast area comprising considerable local variation in physical and social milieu. It is a particular advantage of the sociological perspective that it enables us to ask questions which cut through variations in local conditions, to discover the general patterns which lie hidden under the masks of geographic and historical accident.

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BUREAUCRATIC MAN: A PORTRAIT AND AN INTERPRETATION¹

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American Sociological Review 1971, Vol. 36 (June):461-474

There is a small but consistent tendency for men who work in bureaucratic organizations to be more intellectually flexible, more open to new experience, and more self-directed in their values than are men who work in nonbureaucratic organizations. This may in part result from bureaucracies' drawing on a more educated work force. In larger part, though, it appears to be a consequence of occupational conditions attendant on bureaucratization— notably, far greater job protections, somewhat higher income, and substantively more complex work.

It is often asserted that bureaucracy makes for unthinking, literalistic conformism. So self-evidently correct does this view seem that Webster's Third New International Dictionary defines bureaucracy as, among other things, "a system of administration marked by . . . lack of initiative

and flexibility, by indifference to human needs or public opinion, and by a tendency to defer decisions to superiors or to impede action with red tape." Moreover, there is plausible theoretical reason why bureaucracy should have such effects. As Merton (1952) pointed out, the social psychological corollary of the efficiency, rationality, and predictability that Weber prized in bureaucratic organizational practice must be a certain "overconformity" in the behavior of bureaucrats.

But does working in a bureaucracy merely

¹ I am indebted for critical advice and essential help to my associates: Carmi Schooler, Lindsay Williams, Elizabeth Howell, Margaret Renfors, Carrie Schoenbach, and John Westine; and, for carrying out the survey on which the research is based, to Paul Sheatsley, Eve Weinberg, and the staff of the National Opinion Research Center.

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