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As school systems grow both vertically and horizontally, they face forces tending both to unify (centripetal) and to disunify (centrifugal). A viable system growth involves a blend of both forces on both vertical and horizontal dimensions. It is often assumed that the disunifying impact of centrifugal forces is of such proportion that the administrative unit must grow in size at a rate faster than that of the system in order to provide adequate centripetal impact. Data compiled for all school districts in the United States from 1951-52 to 1963-64, however, show that the relative size of the administrative component varies inversely with the size of the system. Although evidence from the literature is scanty, general propositions can be tentatively advanced concerning the relationship between system size and personnel absences: (1) Absence is associated with size in a curvilinear relations, increasing and then decreasing; (2) in a small system absence is a function of the total social system, while in a large system it is associated with the characteristics of the subsystem work group; (3) absence varies most in small system; and (4) frequency of absence varies inversely with the degree of compatibility of personal and organizational styles. (HW)

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ABSENCE, LEGITIMACY AND SYSTEM SIZE

R. Oliver Gibson

Introduction

Systems may be defined and analyzed at different functional levels (from inanimate through animate to cultural levels). (Boulding, 1956; Gibson, 1968). It seems useful for present purposes to analyze the school system at the social level and define it as a social system consisting of a set of educational goal related positions. A position is viewed as a location within the social space of the system around which cluster expectations of system incumbents specifying rights and duties attached to the position and, consequently, its role. The size of the system is here defined as the number of positions; the number of position incumbents would then be a close approximation of the size of the system. The number of relationships among positions and subsystems of positions is here seen as a measure of complexity. By definition there is bound to be some degree of relationship between size and complexity. However, two schools may have the same number of positions but different subsystems of positions making a difference in complexity. Urban educational systems can be expected to be located toward the upper end of size and complexity distributions of such systems. Some implications of size for social process and legitimacy will first be considered. Finally some implications for absence behavior will be explored.

Size and Social Process

In many ways size is valued in society as Gouldner (1962) has pointed out, and bigness often has a sort of 'goodness' about it. Bigness in social systems, however, is often seen as conflicting with the value of individualism, contributing to 'impersonality' and is normally taken to be 'bad.' Size does have some built-in value paradox with the 'bad' image often getting the upper hand. Commonsense reasoning would probably argue that increased absence is bad and increased size is bad. Hence it would not be surprising to find that absence varies directly as size of system. Revans (1957) like Baumgartel and Schol (1959) found a direct association between size of organization and work group and such variables as absence, accidents, and strikes. The Action Society Trust (1953, 1957) also found that increased size was associated with 'adverse' outcomes. The latter study, however, concluded that it was not size per se that was involved but factors behind "size." It may prove useful, then, to explore briefly what is involved in the social process of increasing size.

As the task of a system grows in size more positions and persons will be needed to perform the work and some will be put in charge of others resulting in vertical growth. As the extent of the work is increased, there is greater likelihood that the task will be broken up into somewhat different specialized subtasks resulting in a division of labor which is here called horizontal growth. As a social system increases in vertical and horizontal size, some of the forces at work may serve to coordinate and bring subsystems into more unified action toward the goals of the system. Such forces are called centripetal. Other forces, particularly division of labor, tend toward less unified system action and may be known as centrifugal forces.

Development of the administrative subsystem and elaboration of rules and regulations would normally constitute centripetal forces, while decentralization would tend to be centrifugal. Presumably viable system growth would involve a functionally useful blend of both centripetal and centrifugal forces on both vertical and horizontal dimensions. There may very well be turning points in certain of those system variables as the system grows in size.

It is often assumed that the disintegrative impact of centrifugal forces is of such proportions that the administrative unit must grow in size at a rate greater than that of the system in order to provide adequate centripetal impact. Terrien and Mills (1955) in a study of schools in California found that the larger the size of the containing organization the greater the proportion given over to the administrative component. Arson and Markov (1961), however, found in a study of hospitals that the relative size of the administrative component decreased as size increased. Their findings suggest the hypothesis that the relative size of the administrative component decrease with increased vertical size and increase with increased horizontal size. Thus, as they suggest, increased relative size of the administrative component may be associated with increased complexity. Of possible interest in this connection is data compiled for all school districts in the United States from the biennial reports of the U. S. Office of Education:

YEAR	1951-2	1953-4	1955-6	1957-8	1959-60	1961-2	1963-4
Administrative Personnel (% of Total Staff)	4.8	4.85	4.3	4.3	4.2	3.8	3.8
Instructional Personnel (% of Total Staff)	77.6	79.0	74.3	72.5	70.8	68.0	68.0
Supportive Personnel (% of Total Staff)	17.6	16.1	21.4	23.2	25.0	28.2	28.2
Number of School Personnel per School District	28.0	29.5	37.2	44.5	55.9	71.8	87.1

In the above table the relative size of the administrative component (Administrative Personnel) varies inversely as the size of the system (Number of School Personnel per School District). It is interesting to note that the relationship was levelling out toward the end of the period. If the earlier line of reasoning has relevance, it may be that schools were changing from a predominantly vertical growth to a greater degree of horizontal growth. If such is indeed the trend, an increase in the relative size of the administrative component might eventuate.

Does the nature of centripetal force change with size? Ideology of the system may be assumed to be such an integrative force. Blau and Scott (1962) identify differences between small-size and large-size industries; the ideology of the former emphasized hard work and superior ability where the latter emphasized advancement and technical skill. Thomas (1959) in a study of welfare bureaus of the Michigan State Department of Social Welfare found that in the smaller bureaus there was greater role consensus between the worker and his supervisor about the importance of functions that workers perform, greater breadth of role conception, and higher ethical commitment. The differences are reminiscent of those formulated with respect to primary and secondary groups. One is lead to hazzard the guess that there are rather different organizational styles for the small and the large formal system. Worthy (1950) has suggested that there is a personality difference between successful administrators of "tall" and of "flat" organizations.

Schreeter and Herman (1967) contend that the success personality is different in the small company than in the large one. It may very well be that compatability of personal and organizational style is in some ways associated with system effectiveness at various size levels.

There is considerable evidence to suggest that the immediate or primary work group is highly significant in shaping the behavior of employees. Likert (1961) contends that "better results are obtained when an organization uses its manpower as members of well-knit, effectively functioning work groups with high performance goals than when its members are supervised on an individual man-to-man basis," Likert adduces much evidence to maintain that that employee membership in a high peer-group-loyalty work group contributes to high productivity. Presumably such high group identification makes for greater group attractiveness, sanctions system performance norms, and facilitates social identity. It does appear that the major point of work identity is the primary work group. March and Simon (1958) hypothesize that the smaller the size of the organization the greater the compatability of organizational and other roles. They make the same hypothesis for size of work group. If compatability decreases through increased organizational size, use of small work groups might serve to counteract the decreased compatability.

Absence and Legitimacy

Rules and regulations normally specify when a person is to occupy the school position for which the person is employed. Failure of the person to occupy the position at that time is an absence and is recorded by the system as such. The specified time is normally related to presence of children at the building. So absence is no casual matter. Absence and its effects are highly visible in the system, particularly in schools. Consequently reasons given need to be as legitimate as possible for purposes of the record and for relationships with those in the work group and for the system. Illness has been recognized as legitimate grounds for absence so long as it appears reasonably authentic. There are other reasons with varying degrees of legitimacy.

Visibility of absence and personal friendships in the work group can be expected to be relatively strong in small systems. Thus the ideosyncracies of the values of the work group could be expected to affect absence legitimacy and thus its occurrence. Those effects could be expected to decrease with size of the system easing legitimacy and permitting more absence. However, as the system grows in size and the number of subsystems increases, the need for consistency, regular practices, and the like normally results in more formal rules and regulations thus increasing the need for formal legitimacy and acting as a depressant on the occurrence of absence. Revans (1957) found that absence increased with both size of system and work group. Gibson (1966) points out that in Chicago schools there was a curvilinear relationship with absence at first increasing with size and decreasing in still larger schools. Georgopoulos and Mann (1962) in a study of community hospitals found absence to be a function of subsystem units or work groups.

If there is less emphasis upon rules in small systems, one could expect considerable variability over time. In larger systems, if more attention is given to rules, ideosyncrasy could be expected to decrease and less variability would be evident. Such a line of reasoning seems to be consistent with absence from the high school and eight elementary schools in a school system in the Boston metropolitan area (see accompanying table). If we are willing to accept rank differences as indicative of system variability over time, then the smaller rank differences for larger schools and the larger rank differences for small schools suggests that system variability decreases with size, or, alternatively, that system reliability increases with size. The hypothesis makes some sense. The small system has been seen as relying heavily on personal contacts and loyalties with relatively little dependence on rules and regulations. With increased size the situation tends to reverse reducing the ideosyncracies of individuals and increasing the reliability of rules. Thus one might think of small organizations as "wild" systems and large organizations as "domesticated" systems.

Percentage Absence in the High School and Eight Elementary Schools of a School System Ranked by Size and Percentage Absence for 1948-49 and 1958-59 with Average Rank Differences for Large, Middle, Small Schools .

School	Staff Size		Percentage Absence				Difference in Ranks	Average Rank Difference (large middle & small)
	1948-9	1958-9	1948-9		1958-9			
			%	Rank	%	Rank		
H.S.	97	118	.052	2.0	.069	1.0	1.0	
E1*	35	47	.024	6.0	.037	5.5	0.5	1.7
E2*	24	33	.026	4.5	.034	7.5	3.0	
E3	19	33	.044	3.0	.040	3.5	0.5	
E4*	22	23	.026	4.5	.037	5.5	1.0	2.0
E5**	22	21	.012	8.0	.040	3.5	4.5	
E6	19	19	.072	1.0	.032	9.0	6.5	
E7**	17	19	.011	9.0	.034	7.5	1.0	4.8
E8	13	15	.022	7.0	.056	2.0	3.0	

Some who claimed to be knowledgeable about the system-identified some schools as run by the principal in a "tight" manner (marked in the table by *) while others were run in a "democratic" manner (marked **). It is of some interest, perhaps, to note that all the "tight" schools are larger and both "democratic" schools are toward the smaller end.

Discussion

These are but a few notes on the matter of system size with regard to administrative processes, particularly absences of personnel. The literature on size is limited, the nature of size and its difference from complexity is not well defined, and it seems that understanding is to a degree clouded by negative value assumptions regarding increased size. It does seem reasonable at this stage to advance tentatively the following propositions:

1. Absence is associated with size in a curvilinear relationship, at first increasing then turning and decreasing. No evidence or rationale is advanced for the location of the turning point.
2. In small systems as compared with large systems, absence is more a function of the total social system while in large systems, absence is more associated with the characteristics of the subsystem work group.
3. Absence will be more variable in small systems than in large systems.
4. Frequency of absence will vary inversely as the degree of compatibility of personal and organizational styles.

Finally some comments on urban school systems. They tend to be large as compared with other school districts. We have already raised the possibility that schools have grown primarily in a vertical direction. If such is the case, it should not be altogether surprising. Growth of systems, it seems very likely, is guided in our society by the ideology of bureaucracy inherited from Prussia and widely utilized in formal organizations. It clearly assumes a vertical hierarchy of authority and control.

It may very well be that one of the major problems facing urban school these days is one of shifting from vertical to horizontal growth in size. Such a shift would involve change from subsystems rationalized upon authoritative control criteria to those conceived in terms of task functionality. Decentralization of urban school systems can be expected to be opposed by interests vested in vertical control whether system administration or organizations of personnel. The line of reasoning presented above suggests that associated with future horizontal growth in urban school systems is likely to be a relatively more rapid growth of the administrative component.

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