Inequality and Communication in Early Civilizations

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RÉSUMÉ

Cet article compare les implications politiques des systèmes de communication dans les sociétés pré-industrielles à différents niveaux de complexité socio-économique. À mesure que le groupe s'accroît, l'accès de l'individu à l'information devient une question de spécialisation.

L'organisation de l'information nécessaire pour coordonner de grands groupes engendre une structure administrative qui se différencie en plusieurs niveaux et acquiert plus de complexité à chaque niveau à mesure que les unités politiques deviennent plus grandes et économiquement plus complexes. Dans une telle hiérarchie, le pouvoir est en corrélation directe avec la capacité d'un individu de recueillir l'information jugée vitale pour gérer la société, l'organiser et en contrôler la distribution. Les difficultés de communication dans la plupart des états pré-industriels ont encouragé la délégation des processus de décision dans toutes les sphères qui ne sont pas vitales dans l'obtention des objectifs spécifiques des groupes dominants.

INTRODUCTION

Canadian social scientists have made some of their best contributions to the study of communications. Among the first

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and most important was Harold Innis, who late in his career paid considerable attention specifically to the nature of communications in the early civilizations. In particular, this is evident in his book *The Bias of Communication* (1951). More recently, although unfortunately not in Canada, the latter subject has attracted interest among archaeologists. David Clarke (1968: 88-101) was among the first to point out the potential value for archaeologists to treat culture as an information system. Since then a growing number of British and American archaeologists have argued the importance of communications as part of a broader systemic analysis of prehistoric cultures (Flannery 1972; Renfrew 1975; Johnson 1973; see also Segraves 1974).

In this paper I wish to compare and contrast some general features of communication in societies at differing levels of sociocultural complexity. My aim is to shed fresh light on functional relationships that previously have tended to be overlooked. I will also make tentative efforts at quantification, although these will concern the technologically-simpler rather than more complex societies. In my opinion, the need for quantification is great if anthropologists are to deal with the major theoretical problems of their discipline in more than a conjectural fashion.

BAND SOCIETIES AND AUTONOMOUS VILLAGES

Since the work of Emile Durkheim (1893) no social scientist has been able to ignore the importance of the division of labour as a key to understanding society. It is often claimed that a jack-of-all-trades is a master of none. Yet this proverb embodies a comparative perspective that is possible only in a technologically-evolved society. In the most small-scale societies, whether they have hunting and gathering economies or are small, politically-autonomous horticultural communities, everyone knows and performs all the essential tasks appropriate to his or her sex. This does not rule out the possession of specialized esoteric knowledge by individuals, although such knowledge will be limited in complexity and its transmission is frequently hazardous. In such societies, the small scale also makes it possible for those individuals who must interact with one another to do so on a familiar basis. It is possible for each member of such a society to know in a general way

what the total network of individual relationships within his or her society is like at any one time. Resources tend to be shared as far as individuals are in need, with prestige rather than material riches accruing to unusually skilful or industrious producers. Each male and sometimes each female member of such a society is viewed as an independent agent, who is as free as any other to determine his or her own conduct. The only effective sanctions that can be brought to bear against an individual are those supported by strong public opinion (Sahlins 1968; Service 1966; 1971: 46-132).

Even the smallest bands, however, have members who in certain respects act as leaders. Such a role may be acquired in an informal manner or the office may be the prerogative of a particular family or lineage, as among the Montagnais of southern Quebec in the seventeenth century (Bailey 1969: 91). While this sort of leader may play an important role in directing the economic affairs of his people and in mediating their internal disagreements, his primary role is as a spokesman when his band has dealings with other groups. Yet in speaking for his band the headman must reflect faithfully the opinions of his followers since no agreement he makes can have more force than each individual is willing to give it. The necessity for headmen to secure the personal adherence of each of their followers for every agreement they negotiated was not understood by the Europeans who first dealt with the Indians. The Europeans interpreted the failure of headmen to enforce what seemed like firm commitments as acts of bad faith.

On the basis of data from New Guinea, Anthony Forge (1972: 374) has argued that in societies with no more than 30 adult male members (or a total population of about 150), basic egalitarian principles are generally respected and internal rivalry tends to be low-keyed because there is an insufficiency of challengers to leaders of strong personality. In societies of up to 75 or 80 adult males (or a total population of 350 to 400) individualized competition occurs, but this too safeguards the egalitarian structure of society. Only when the number of males rises above 80 do their face-to-face relationships reach the limit that each player can handle successfully. Above that limit, for lack of sufficient information the game becomes disorganized and unbalanced, causing tension to increase. If the ecological situation allows for dispersal, such a group may

split apart, establishing two separate bands or communities. Kroeber (1955: 309) set the limit at which Indian tribes in many parts of North America tended to break apart at 500 members. Alternatively, the society may increase in size, but in order to do so it must adopt new principles of organization. It is at this point that internal segmentation is resorted to, thereby permitting a classification of relationships. This facilitates a reduction in the amount of information that any one actor has to carry about in his head.

TRIBAL SOCIETIES

The type of society thereby created, like the sedentary groups discussed above, is also at the tribal level. It is exemplified by larger, sedentary, and frequently horticultural groups such as the Huron. In these societies, as in the smaller-scale ones, each man and woman possesses the full range of skills necessary for his or her nuclear family's subsistence. Craft specialization is limited and constitutes a minor part of any individual's routine. Within communities, redistribution is highly-valued and reinforced by public opinion. Those who are stingy risk being accused of witchcraft, which in turn may entail severe penalties. At the same time, self-reliance and individual autonomy are prized highly (Trigger 1976: 27-90).

Among the Huron, the minimal unit of settlement was equivalent in size to the individual band-type societies discussed above. It was a village consisting of about 300 people. Its core of lifelong inhabitants apparently were members of a single clan composed of a number of matrilineal extended families. Like many other American Indian groups, each clan unit had two headmen; one for peace and one for war. At least the former office was the property of a specific lineage of each clan.

The advantage of a small village was that it kept cultivators in proximity to their fields and exhausted surrounding soil and sources of firewood more slowly than did larger ones. Yet, as a defence against warfare and blood feud many villages had 1500 or more inhabitants. Such a village was composed of four or five clan groups, each of which appears to have occupied its own portion of the community. Each clan group retained as much political

independence within a large village as it had when it constituted a separate community. Suspected interference in the internal affairs of a clan unit by members of other clans was deeply resented and not infrequently resulted in the break-up of large villages.

The collective affairs of a large village were regulated by a council attended by the peace chiefs of the various clan groups and less regularly by lineage heads and old men. One of the clan heads was recognized as spokesman for the entire village. This office also tended to be hereditary. The council concerned itself with coordinating the ritual activities of the community, supervising village-wide redistribution of resources (when necessary), and resolving disputes between (but never within) the clans making up the village. The recognition of one clan chief as village spokesman constituted a categorization and implicit ranking among headmen not found within smaller-scale societies.

Among the Huron, several villages constituted a tribe, each of which averaged 5000 members. Each tribe had its affairs co-ordinated by a council, which at least in theory appears to have been made up of the peace chiefs of all of the clan groups within the tribe. One of these chiefs, again usually on a hereditary basis, was recognized as being the official spokesman for the tribe. The tribal councils were concerned primarily with coordinating trading with other groups, and foreign policy generally, and with preventing blood feuds when disputes involved more than one village. Finally, at least in historic times, four or five neighbouring Iroquoian tribes often constituted a confederacy embracing up to 20,000 people. Each of the tribes belonging to the confederacy might be separated from the rest by its own hunting territory (as among the Iroquois) or they might all live in close proximity (as among the Huron). The confederacy council was composed of the same peace chiefs who sat on the tribal councils. One chief may have been the traditional convenor of the council, but various specific functions were assigned on an hereditary basis to individual council chiefs, so that it is unclear to what degree any of them could be considered a spokesman for the confederacy. The French quickly recognized the tribal spokesmen among the Huron and had important dealings with them. By contrast, the convenor of the confederacy council remained a shadowy figure, even to the Jesuits

after they had lived among the Huron for many years. The primary concern of the confederacy was to avoid blood feud and other forms of conflict among its members. Efforts were also made to coordinate warfare, although relations with other groups were handled mainly at the tribal level.

The Huron regarded it as a matter of principle that an individual could not be regarded as bound against his will by any decision made by the confederacy council or by tribal, village, or clan spokesmen. Public opinion might influence an individual's conduct but coercion could only be practised openly by a man or woman's nearest kinsmen, usually in the form of a threatened expulsion from an extended household. Any other coercion would anger the victim's lineage and clansmen and constitute a threat to the stability of community life. Because of this, spokesmen had to refer every decision that was made back to their constituents for individual approval and implementation. It was therefore essential for a spokesman to be well-informed about his constituents' opinions. Discussions aimed at achieving a consensus and a decision was normally reached when any remaining supporters of a minority opinion would neither support nor oppose a particular policy. A minority faction would remain silent and inactive until changing events produced a shift in public opinion and their policies might once again attract support. European observers regarded such latent factions as a source of strength rather than weakness to the Iroquoians since they allowed for great flexibility in dealing with changing circumstances, especially in intertribal relations.

The one coercive power that chiefs possessed was to pronounce an individual guilty of witchcraft. According to Huron law anyone might slay a known witch while the victim's relatives were forbidden to resort to blood revenge to avenge such a killing. It was, however, only the chiefs who could publicly determine whether an accused person was in fact a witch. This power could be exercised only for the benefit of the society as a whole or of the chiefs as a collective interest group since to be effective all of the chiefs, including the spokesman for the accused person's own clan, had to co-operate in condemning him. In spite of this limitation, threat of a formal accusation for witchcraft appears to have been a potent instrument of social control (Trigger 1963).

The Huron demonstrate that individual villages of up to 1500 people and societies of up to 20,000 people and with as many as four levels of government could be made to work relying only on public opinion and on the individual's voluntary implementation of each decision. Most of an individual's regular activities were related to his clan, a unit that was structurally very similar to the bands and autonomous villages discussed above. It was in terms of the clan that all of an individual's basic rights and responsibilities were defined. Larger communities consisted of a number of clan modules politically integrated by a council on which the clans were represented primarily by their peace chiefs. These headmen attempted to coordinate policy but could not commit their individual constituents to a particular line of action. The principal innovation of such a council was to recognize one clan chief as spokesman for the whole village. Factionalism can be documented as endemic in the larger Huron settlements and it would appear that a population of approximately 1500 represents the upper limits of stability for this type of political organization (Heidenreich 1971: 129-134).

In a study comparing settlement size and social organization in 30 pre-urban societies, Naroll (1956: 690) has observed that "when settlements contain more than about five hundred people they must have authoritative officials [a Huron council-type arrangement?], and if they contain over a thousand, some kind of specialized organization or corps of officials to perform police functions." Murdock (1957: 674) places the lower limit for his minimal state (implying some sort of coercion or police function) at 1500, although it is unclear whether or not Murdock had a single community in mind. Foster (1960: 379) likewise has suggested 1500 as the upper limit at which a settlement "can function as a single community." This suggests that if a settlement is to have a population larger than 1500 on a long-term basis, some form of coercion may be required as part of the regulatory mechanism of its government. From a communication point of view, no mystique or even the necessity to invoke class considerations is required to explain this sort of development. As a community grows in population above 1500, it becomes cumbersome and often dangerously time-consuming to refer all of the routine decisions necessary to govern the community back to the population at

large. In place of generalized consultation, some form of executive representation is required for government at even a minimal level of effectiveness. Coercion can be viewed as one means by which community decision-makers are assured that their routine decisions will be executed.

The Huron example also demonstrates, however, that in the form of tribes and confederacies multi-community political units of 20,000 people or more may function without recourse to coercion or the delegation of decision-making powers. In terms of population, the confederacy appears to fall within the same size range as the chiefdom, to which Baker and Sanders (1972: 163) attribute an average of 10,000 to 12,000 members. The higher levels of Huron government seem to have worked because the issues with which they dealt were limited and because the same clan representatives functioned at each level. Moving from village to tribe to confederacy, these clan representatives met in larger groups, but less frequently and to handle fewer issues. The continuity of these clan personnel through the higher levels of government minimized the misunderstandings and conflicts that might have arisen from misinformation. It also ensured that every Huron clansman had ready access to information about what was being discussed at every level.

It is unclear whether it is realistic to ask if there is a demographic point at which an entire society (as opposed to a community) must delegate decision-making authority and equip its leaders with coercive powers. Baker and Sanders (1972: 163) suggest that chiefdoms may grow to about 50,000 inhabitants but that in the long run large ones will tend either to fall apart or to develop into coercive states. Apart from demographic factors, it seems clear that at a certain point entire socio-cultural systems grow sufficiently complex that delegated decision-making becomes necessary for their regulation, which in turn requires some form of coercion.

STATE SOCIETIES

There is another saying which is only partially true that knowledge is power. This was certainly not so for the skilled craftsmen of ancient Egypt, who were scorned as mere manual labourers by

the bureaucratic scribes who integrated the national processes of production and distribution (Childe 1958: 93-97). While some craftsmen may have enjoyed prestige, power traditionally has accrued to those who integrate the processes of production and distribution. In the ancient civilizations governments developed for the first time as a fully-specialized subsystem within the social order and ruling for the first time constituted a fully-specialized profession. The rulers of these early civilizations were assisted by various categories of full-time personnel: scribes (bureaucrats), soldiers, personal retainers, and elite craftsmen. The societies were administered by a multi-tiered hierarchy in which officials at each level owed their services to a superior official or officials and were answerable to those officials for the conduct of lesser people who were in their charge. It has recently been proposed that the state may be equated with an administrative hierarchy that consists of three or more levels as reflected in a hierarchical arrangement of settlements of varying size and complexity (Johnson 1973: 2, 15). If the employment of coercion to supplement public opinion as a means of effecting policy is still accepted as an important criterion of the state (as I believe it must be), this operational definition may not serve to identify the smallest and simplest states. Nevertheless, the hierarchical characteristics that it stresses are associated with all state-organized societies from Renfrew's (1975: 12-21) Early State Modules to the largest empires of antiquity or modern times.

Kent Flannery (1972) has noted that cultural evolution correlates with an expanding capacity to process, store, and analyse information and has specifically characterized political and religious institutions as data-processing systems. Johnson (1973: 3) has identified the functions of such institutions as being to collect data, make decisions, and disseminate information. Flannery (1972) views these institutions as achieving power by *promotion,* that is by rising in a developing hierarchy of control to assume a higher-level and often transformed role. Their power is further enhanced by *linearization,* or cutting past lower-order controls, often after the latter have failed to function in an increasingly complex situation.

Yet, however much administrative hierarchies are concerned with processing information, they are by no means neutral entities

attending impartially to the interests of the whole society. On the contrary, rulers regard such hierarchies as the means by which their personal (albeit culturally-conditioned) ambitions may be realized. The truism that provides the point of departure for most of Service's (1975) recent arguments about the nature of early civilizations is the observation that no state can be held together by force alone. For a regime to survive, a majority of its subjects must remain convinced that there is no reasonable chance of seeing it replaced by a regime that might better serve their interests.

Yet even if no government can ignore public opinion totally, the elimination of the ruler's accountability for routine decisions introduces an element of privacy and secrecy into the governing process. This change correlates with major alterations in the fabric of society. Prestige is no longer maintained by massive redistribution on the part of leaders. Instead, vast surpluses are placed at the disposal of rulers, which they may employ in a wide variety of ways. Powerful individuals are not compelled to redistribute by fear of being accused of witchcraft if they do not. On the contrary, they can reverse the former practise by directing accusations of witchcraft against the traditional recipients of their bounty, should individuals' claims prove burdensome (Macfarlane 1970). This lays the basis for the development of extensive usufruct and private property. Not being in a position to know for certain what a public figure possesses or does make it harder for a subject to accuse him of wrongdoing.

Concomitant with rulers obscuring many of the everyday details of government business is their energetic promotion of a mystique of office. Few rulers even today do not try to claim some element of supernatural sanction for their power. Michael Coe (1972) notes that early kings sought to have themselves credited with divine status and for their lineages to be regarded as of divine origin and therefore generically different from those of their subjects. These claims helped to justify not only their failure to redistribute goods equitably but also the conspicuous consumption in which the elite of the early civilizations indulged so heartily. Yet familiarity breeds contempt. Rulers of small-scale societies, in particular of city states, always had a much harder time establishing claims of omnipotence than have the rulers of

large empires. Conversely, the more agrarian large states were, the less scepticism there seems to have been. Some of the most far-reaching claims of divinity were advanced by the Inca rulers of Peru and by the Egyptian Pharaohs (Spath 1973; Trigger, in press).

We have assumed that the need for complex societies to make and implement decisions quickly requires the majority of individuals to surrender a direct role in the decision-making process. This allows political systems to develop that are hierarchical and centralized; hence can process information and respond to challenges more efficiently. Within such a system the officials who channel and process the sorts of information that the state regards as vital to its functioning are in a position to decide how quickly and by whom this information can be used. Rulers may withhold information from their subordinates and from dissenting and competing groups or feed false information to these groups if they believe it to be in their own interest to do so (Adams 1975: 453). The system also permits subordinate officials to withhold information from their superiors.

The ability to control a system of this type, even imperfectly, allows rulers to use the surplus resources of society to pursue goals that are to some degree of their own choosing (Eisenstadt 1963). These may be to conquer neighbouring kingdoms, to increase the extent and value of royal domains, to alter the religious system, or to engage in the personal excesses of a Nero or Akhenaton. The successful pursuit of these goals depends upon the effectiveness with which the ruler is able to mobilize the surpluses of society for his own ends. To do this well he must control not only the primary producers but also his officials. In a state that is controlled effectively by its king or his chief officers, these officials function above all else as tax collectors and civil servants for their royal master.

The more neighbouring regions a king can dominate, the more resources he can control and the more effectively he may promote and reward his own followers. As A.L. Oppenheim (1964: 117) has observed "real prosperity came to a Mesopotamian city only when it had in its midst the palace of a victorious king". Because the fortunes of a militarily-successful monarch and his own people are so mutually interdependent, the internal authority exercised by

such a ruler is likely to be great. By contrast, a weak and tributary ruler is less likely to enjoy the respect of his own people and the affairs of his kingdom may be turbulent and disordered. This no doubt explains why, in their relations with other states, powerful rulers of ancient states or those who believed they had a chance to become powerful were willing to hazard their fortunes by adopting strategies emphasizing maximization of returns rather than maximization of security, such as normally characterizes the behaviour of the poorer elements of society and possibly of petty rulers as well (Shimkin 1973: 275). Yet Robert M. Adams (1975: 453-454) has observed that these rulers had to make important decisions about internal as well as external policies in the face of vast uncertainties about the actual situations that were confronting them and the possible consequences of particular lines of action. Today political leaders must cope with awesome imponderables but it seems likely that, in spite of the greater size and complexity of modern states, advances in communication and data processing, as well as improved scientific knowledge about the consequences of policy decisions, have reduced this uncertainty by comparison with what confronted the rulers of the early civilizations.

DATA PROCESSING SYSTEMS

Rulers find it advantageous to be regarded as omniscient as well as omnipotent. Yet in the early civilizations data collecting and record keeping were expensive, labour-intensive undertakings frequently requiring highly-trained staff. Maintaining lines of communication grew increasingly burdensome as the size of political units increased. The far-flung Persian, Roman, and Inca empires had extensive road systems that were built and maintained to facilitate the movement of their armies and of the government courier service. Innis (1951: 40) has described the government of the Persian Empire as "an elaborate administration based on a system of roads and the use of horses to maintain communication by post with the capital". He also accepted the suggestion that the greater stability of Near Eastern empires in the second millennium B.C., as compared with those of earlier times, can be attributed to the acceleration of official journeys as a result of the introduction of the chariot (ibid. p. 95). Yet the speed at which messages could

be transmitted along even the best roads was that at which a relay of couriers could run or ride. A week or more might elapse before the report of an invasion or revolt in an outlying province reached the imperial capital; meanwhile, the road system might accelerate the advance of the enemy. The only more rapid form of communication, using signal fires, was vulnerable to bad weather and limited in terms of the messages that could be conveyed. The principal advantage of a royal courier service could scarcely have been its absolute speed (which was far from ideal) but that it was faster than what was available to those who were not authorized to use it.

Not long ago anthropologists equated civilization with literacy. Many archaeologists working in the Near East still believe that writing is highly likely to develop as a data-storage technique when a given level of complexity is reached (Johnson 1973: 3). This seems to be supported, for example, by the apparently extensive use of writing for bureaucratic purposes in ancient Egypt: to record ownership of land, payment of taxes, the assignment of materials to individual workmen, and the presence or absence of men on specific work shifts. Yet, evidence from Africa and the New World reveals that complex societies can exist without fully-developed (initially logosyllabic) writing systems and that those early civilizations that lacked writing were of comparable complexity to those that had it. Whether we are considering collections of city states, such as the Maya or the ancient Mesopotamians who were literate or the highland Mexicans who were not, or much larger polities, such as Dynastic Egypt which was literate or the Inca Empire which was not, there is no obvious functional reason why some of these should have developed writing systems and not the rest. The Inca managed to do their book-keeping with knotted ropes (*quipu*) and by conceiving of work teams as decimal units. The eighteenth century Dahomeans did the same by means of pebble counting and appointing female officials to note and remember what their male counterparts did. This suggests that writing *per se* was not as vital for data-storage in the early civilizations as has been imagined. Karl Polanyi coined the term "operational device" to cover the wide range of techniques other than literacy that were used for accounting, census-taking, and record-keeping in pre-industrial societies (Dalton 1975: 99-100).

The rationale for the development of writing may have to be sought in the detailed structure of specific cultures. It is here that the seminal writings of Harold Innis (1951) may yet prove to be of special value. In particular, writing appears to have assisted the development of private property, of specific types of long distance banking, and of promulgated as opposed to traditional law. The survival over very long periods of time of cumbersome logosyllabic scripts and the fact that the Roman Empire was able and (what is more significant) willing to keep its accounts in Roman numerals suggest that governments made relatively small demands upon ancient writing systems as a means of data-storage and manipulation.

In a recent study, William Rathje (1975) has utilized certain propositions derived from General Systems Theory to attempt to construct a developmental scheme that accounts for the manner in which a developing early civilization coped with the problem of processing an increasing amount of information. By implication, what he says can be applied specifically to the evolution of political institutions. Rathje proposes that in the early stages increasing complexity was coped with by a markedly disproportional increase in information processing and deciding components (that is, by having more bureaucrats). Later, an attempt would be made to forestall the growth of bureaucracy beyond economically-acceptable limits by greater standardization. The development of standard, system-wide codes decreased the amount of recoding, and therefore accounting, that was necessary. Still later, efficiencies were effected by encouraging more autonomy at lower levels; the whole society being integrated as a series of interdependent, interacting components. Rathje's scheme looks like a rationalization of American laissez-faire idealism and examples of each of these processes probably can be shown to have been employed in the governmental institutions of any early civilization at any one phase of its development. As a whole, the scheme does not impress me as being plausible. The principal means by which ancient bureaucracies at any stage of their development had their task rendered manageable was by limiting linearization to essentials. In this respect, any comparison between a modern state and those of former times is inappropriate. The detailed penetration of the information-processing organs of the modern state into the lives

of its members which electronic computers make possible was impossible for the smaller, preindustrial states. On the contrary, officals at the highest levels of such societies limited their interventions into the affairs of the common people or of distant provinces to matters directly related to securing the goods and services necessary to achieve their own particular goals. Local rulers and officials generally were accorded something approaching plenipotentiary powers over their province, district, or village, so long as they could convince their superiors that they were in control of the situation and could supply them with what they wanted or what traditionally was owing to them. Such relationships produced curious behaviour. Chinese provincial officials frequently claimed that their districts had smaller populations than they really had so that they did not have to admit to the central government that they were unable to collect the full rate of taxes from powerful landowners. So long as such behaviour produced adequate revenue, the central government tolerated it rather than admit a lack of control which would imply the weakening of the Mandate of Heaven (Ho 1959: 3-97).

POLITICS AND COMMUNICATION

The avoidance of having to establish lower-level controls is dramatically evident in city state hegemonies as manifested in Early Dynastic Mesopotamia or in highland Mesoamerica in the sixteenth century. In these areas, the governments of conquered city states frequently were left to function more or less freely, so long as they paid tribute to their hegemon. The same principle was applied differently but no less strikingly in the Achaemenid Persian Empire whose provinces or satrapies, though artificial creations, rapidly evolved into sub-kingdoms within the empire (Olmstead 1948: 59). At their empire's greatest extent, the Romans promoted local government. They continued to regard the city state, the archetypal government of early Rome and of its neighbours, as the fundamental unit of political organization. Because of this, they undertook at great effort and cost to transform tribal areas that they conquered (such as southern England) into a mosaic of what appeared to them (if not to the conquered peoples) to be city states. Hyperlinearization (meddling) has been suggested as one of the pathologies to which ancient civilizations are susceptible (Flannery 1972). Yet the

evidence suggests that in general rulers were keenly aware of the limitations of their systems of communication and record-keeping and deliberately avoided overtaxing the capacities of their bureaucratic systems by needlessly eliminating low order controls.

Much of the most striking linearization did not result from a conscious desire to control the everyday functioning of lower-order structures. Instead it was the result of uncontrollable social forces. The Inca Empire and Pharaonic Egypt are in many respects archetypal early civilizations in terms of their structure. In spite of the celebrated decimal-regimentation of the Peruvians and the mania for record-keeping of the Egyptians (which dealt mainly with state business), the vast majority of the population in both of these states were farmers dwelling in hamlets or small villages. Surpluses had to be produced as taxes for the central government and a variety of labour services provided, which occasionally took a fraction of the men away from their villages. Relations with the government probably were mediated through clan or village heads, who served among other things as the lowest-level officials in the administrative hierarchy.

By contrast, the number of people whose lives were transformed radically by the elite traditions of these civilizations was relatively small. They included rulers, priests, and their bureaucratic assistants as well as some full-time soldiers, attendants, and craftsmen. These people were the sole inhabitants of the relatively small administrative centres of Egypt and highland Peru. In spite of the cultural sophistication of these societies, urbanization was notably restrained; only the royal capital and a few regional centres having populations of more than a few thousand people. While the elite cultures of these societies radically had transformed the lives of rulers and their entourages, most people continued to live in villages, where everyday life was governed by local institutions that had altered little from pre-state times (Frankfort 1956: 90-120; Lanning 1967: 157-172).

By contrast, southern Mesopotamian civilization developed as a mosaic of small city states. By the Early Dynastic Period most of the sedentary population of that region appears to have been living in the urban centres that were the nuclei of these states. Warfare in late prehistoric times had induced the inhabitants of

the villages and towns located within a 5 to 15 kilometre radius to abandon these communities and cluster in what became walled urban centres. These provided greater security for an individual's person and household goods and could cope more effectively with prolonged military or natural crises. Yet, while urbanization increased the prosperity and offensive and defensive strength of a small elite, it imposed greater demands for taxes and military and corvée service upon most individuals (Adams 1972).

Most of the inhabitants of the Mesopotamian cities, unlike those of Inca or Egyptian administrative centres, engaged in subsistence production. The urbanization of these agricultural producers transformed them socially, politically, and culturally to a far greater degree than the lives of their peasant counterparts in Egypt or Peru had been transformed. As urban dwellers, they observed the upper classes first hand and hence had the knowledge and inclination to share in the material benefits of urban life. Power was shared by the representatives of a number of different institutions within each city state; unlike the monolithic organization of the Egyptian and Inca ones. Priests, councils, and military leaders often competed for power openly. Although in the long run it was the military leaders who won out, this rivalry probably worked to the permanent advantage of the ordinary people. The archaeological evidence suggests that the average Mesopotamian had far greater access to the results of technological innovation than did the average Peruvian or Egyptian (Frankfort 1956: 49-89). Because the Mesopotamian city tended to be small, its members could observe each other and it embraced representatives of all occupations and all classes. This made it a pressure cooker that transformed the totality of Mesopotamian life. By contrast, the Egyptian and Peruvian peasant lived most of his life in nearly total isolation from such forces. It was the very alienness of the upper classes to his everyday experience that made credible royal claims of divine status such as no ruler of a city state was able to establish. A self-interested policy may have dictated the decline of such independent urban or proto-urban centres as were encompassed by the Egyptian and the Inca realms (Lanning 1967: 163).

The physical problems that impeded communication in the early civilizations heightened mistrust between officials at different

levels in the administrative hierarchy and in large states complicated relations between the central government and officials in outlying regions. Repeatedly and in widely-separated situations we find rulers utilizing a limited range of devices to cope with these problems. The deportation of elites from newly-conquered territories to the centres of empires provided hostages to ensure the good behaviour of those who were left in place. Sometimes, powerful rulers deported whole populations whose loyalty was suspect. The settling of trusted subjects in regions thus vacated, or as in the case of the Roman Empire the establishment of colonies of army veterans in newly-conquered territories was also common. This provided a force that could be counted on to watch for trouble and to resist uprisings until the officials of the regional or, if necessary, the central government could employ their own forces to quell such insurrections. Tension might persist for generations between the newcomers and the resentful original inhabitants of a region, making these policies of more than short-term usefulness to the central government. A more subtle but widely applicable stratagem was a version of divide and rule that involved encouraging local particularisms among subject peoples in order to discourage them from uniting to oppose the central government. Innis (1951: 135) saw an early manifestation of such a policy in the Persians' encouragement of ethnic religious cults within their empire.

To defend the borders of their empires, especially when these were resource-poor areas, weak and strong rulers alike resorted to bribery, clientage, and subtle diplomacy in an effort to pit local groups against one another. An astutely-managed policy repaid the cost of supplying and withholding arms and other resources from various groups in turn. Those who were dominant at any one time, often against their own will constituted a defensive ring protecting the metropolitan state against incursion by pastoral or nomadic tribesmen. Although the manipulation of such a mechanism required political finesse, it usually did not demand constant supervision by the central government but was managed by local officials in the provinces.

In the absence of means for continuous surveillance, central governments resorted to various devices to control provincial

officials. One such method was to create checks and balances by dividing the administrative responsibilities of a province among a number of independent officials. Each province of the Persian Empire was governed by a satrap, a military commander, and an intendant whose authority was independent of one another and who were each directly responsible to the king. The satrap's secretary was also empowered to report directly to the king (Olmstead 1948: 59). A similar division of power between a military governor and an intendant characterized the administration of New France and of each of the provinces of France prior to the revolution. Another device, utilized at certain periods by the ancient Egyptians, was to rotate senior officials from district to district to prevent them from acquiring a local basis of political support. A successful career was one that moved upwards through a hierarchy of offices that took an official from one district to another and finally culminated in a major appointment at court (Frankfort 1956: 101). Both of these strategies had their disadvantages. Divided authority often produced rivalry, mistrust, and obvious hostility, which adversely affected the quality and effectiveness of the administration; rotation meant that senior officials were unable to acquire the detailed knowledge of a particular region that was necessary for its optimal administration. Rotation also may have encouraged the rapacity of officials in their dealings with the people of any one region (Bernier 1916: 227). In both situations the central government was willing to sacrifice major advantages in order to safeguard its own authority. Another form of control was the use of inspectors or spies who kept watch on provincial officials of the central government. The "King's Eyes" and "King's Ears" carefully examined each province of the Persian Empire annually and reported directly to the king what they had learned (Olmstead 1948: 59). In this way the Persian kings sought to forestall revolts or secessions by ambitious provincial officials. Yet ensuring the loyalty of these spies entailed its own problems.

Some of the most serious problems posed by difficulties of communication in the early empires occurred at the highest decision-making levels of government. These problems were first analysed in detail by the medieval Arab historian Ibn Khaldun (1967). His analysis does not apply so much to the rulers of small

states or lower-level officials in larger states, since these inevitably remained in touch with the people they governed. In larger states, however, there was a tendency for kings to become encapsulated within the highly artificial elite life-style that was centred on the royal court. As a result, they no longer made decisions that were based on personal knowledge of the real world. Instead their decisions were based on information that was mediated through a variety of court officials. In some societies, the seclusion of the monarch, which was related to the concept of divine kingship, encouraged such practises. In others fear of usurpation or the desire of court officials to dominate rulers led to heirs to the throne being kept isolated and inexperienced. In the later Ottoman Empire, the former system by which princes were trained in the field gave way to one in which possible royal heirs were isolated in the harem and their education limited to what the permanent inhabitants of that institution could provide. Sometimes such a situation was initiated when a monarch, tiring of administrative duties, retired from public affairs to enjoy the pleasures of his wealth and power. A variety of officials could carry on government in his name but they could not replace him as a focus of loyalty. The informal nature of such government was conducive to political intrigues that undermined the stability of the government. At the same time, the unchecked indulgence of the sovereign diverted the resources of the empire into unproductive and ultimately counter-productive channels. The effect that isolated court life can have upon even forceful rulers is seen in the case of the aged Ch'ing empress Tz'u-hsi. It has been suggested that her opposition even to modest reforms was moderated in part because her flight to Sian, following the European occupation of Peking in 1900, had revealed to her for the first time the wretched state into which China had fallen (Warner 1972: 248). The increasing separation of the ruler from reality encourages politically ambitious leaders, often on the periphery of the state, to found independent states or to make their own bid for imperial mastery.

The rate at which such a cycle is run seems to be slower in both small states and large empires than among states of middle range. In small ones the ruler does not so easily become isolated from reality and in the large ones it takes longer for the effects of his isolation to corrupt the political fabric. It is probably

dangerous, however, to generalize this crudely about the length of dynastic cycles, since the latter appears to be affected by many different institutional factors. For example, the failure of the Romans to work out a pattern of legitimate succession resulted in the frequent seizure of their highest office by military officers who had acquired a wide range of administrative experience. This seems to have more than compensated the system for the disadvantages that resulted from an unstable succession.

TRANSFORMATIONS

What may we conclude from this brief survey of the relationship between inequality and communication? At the highest level of abstraction, I would agree with Forge (1972: 375) when he hypothesizes that human beings can handle only a finite number of intense interpersonal relationships and that as the number of relationships increases classification must be employed to keep them within manageable limits. I would also conclude that information, in the form both of traditional knowledge about how to do things (culture) and of fresh data entering the cultural system (news), can be shared equally by all the males or females of a society only within the simplest band structures. As group size increases, specialization occurs with respect to both types of information. The information-processing necessary to coordinate large groups generates an hierarchical administrative structure that acquires more levels and greater internal complexity at each level as political units increase in size and become economically more complex. Within such a hierarchy, power correlates directly with an individual's ability to collect, process, and control the distribution of information that is judged to be vital to manage society. This does not mean that lower-level officials cannot withhold such information from their superiors or feed them with false information. When this happens, however, it is usually an indication of the weakness of higher-level officials or of the control hierarchy generally.

When a system has reached the point where the referral of routine decisions for general approval must be eliminated in order for the affairs of the group to be managed successfully, the basis

is laid for the breakdown of equitable redistribution and hence for the acquisition and retention of resources by those who are politically powerful. From this point on rulers utilize administrative hierarchies to attempt to achieve goals that they themselves perceive as necessary or desirable. They avoid wasting the resources of their kingdoms through assigning them to support unnecessary and ultimately counter-productive administrative operations. This is done by not exercising higher-level controls over aspects of the system that are or can be made self-regulating. Even so, most early civilizations, far from being efficiently-managed despotisms, stretched their regulatory mechanisms to the utmost. The authority of even effective rulers was a skilful blend of shadow and substance. The limitations that were imposed on the administration of early civilizations by their cumbersome systems of communication and record-keeping are an accurate reflection of the fragility of the socio-political order as a whole.

In discussing bands and villages, I suggested that there might be critical thresholds of population size, which if exceeded necessitated the elaboration of specific kinds of decision-making arrangements. If confirmed such thresholds could be of considerable assistance to archaeologists in interpreting settlement data. Within societies at any one level, however, and particularly when dealing with complex societies, the nature of systems for procuring and processing information becomes extremely complex. Simplistic models cannot deal adequately with real situations, which require detailed analyses similar to those which social anthropologists provide for their data. This is a type of analysis for which game theory may be more appropriate than systems theory, at least as the latter is currently being applied. Robert M. Adams (1974: 248) has argued that archaeologists ought to pay more attention to the historic role of conscious decision-making. This includes recognizing "that goal-motivated behaviour has been a decisive factor in many social transformations". The concept of goal-motivated behaviour also questions the assumption, long-challenged but now all too prevalent among archaeologists, that all processes of change occur in the form of graceful, uninterrupted, and irreversable trajectories. As Adams (ibid.) again points out, changes in the early civilizations often took place in "dizzyingly abrupt shifts". This happened as rulers sought with varying degrees of success to maximize their

position by dominating weaker neighbours or crushing internal rivals. Such "historical" events are among the most difficult phenomena for archaeologists to discern and explain.

APPLICATIONS

Especially where some written records survive, the analysis of political transformations of this sort, although arduous, is not wholly beyond the archaeologist's hope. A better understanding of such situations may partly be facilitated by the development of analytical procedures that will permit a better understanding of communication systems. Archaeologists have made rapid progress in adapting the rigorous techniques that geographers have developed for locational analysis to the needs of settlement archaeology. Communication is clearly a relevant aspect of the hierarchies revealed thereby (Renfrew 1975). The mathematical approaches that Torsten Hägerstrand (1967) has developed to model the diffusion of innovations and the application of stochastic models to study social processes (Bartholomew 1967) suggest that other more rigorous quantitative approaches can yet be applied to the investigation of the process of communication in the early civilizations. This, in turn, may provide archaeologists with a more sound basis on which to investigate the development of administrative hierarchies, social inequality, and class-based societies.

REFERENCES

ADAMS, R.M.

1972 Patterns of Urbanization in Early Southern Mesopotamia. In P. J. Ucko, R. Tringham and G. W. Dimbleby (eds.), *Man, Settlement and Urbanism,* pp. 735-759. London: Duckworth.

1974 Anthropological Perspectives on Ancient Trade. *Current Anthropology* 15: 239-258.

1975 The Emerging Place of Trade in Civilizational Studies. In J. A. Sabloff and C. C. Lamberg-Karlovsky (eds.), *Ancient Civilization and Trade,* pp. 451-464. Albuquerque: University of New Mexico Press.

BAILEY, A.G.

1969 *The Conflict of European and Eastern Algonkian Cultures, 1504-1700.* Toronto: University of Toronto Press.

BAKER, P.T. and SANDERS, W.T.
1972 Demographic Studies in Anthropology. In B. J. Siegal (ed.), *Annual Review of Anthropology* I: 151-78. Palo Alto: Annual Reviews, Inc.

BARTHOLOMEW, D.J.
1967 *Stochastic Models for Social Processes.* London: Wiley.

BERNIER, FRANÇOIS
1916 *Travels in the Moghul Empire, A.D. 1656-1668.* London: Humphrey Milford.

CHILDE, V.G.
1958 *The Prehistory of European Society.* Harmondsworth: Penguin Books.

CLARKE, D.L.
1968 *Analytical Archaeology.* Methuen.

COE, M.D.
1972 Olmec Jaguars and Olmec Kings. In E. P. Benson (ed.), *The Cult of the Feline,* pp. 1-18. Washington: Dumbarton Oaks.

DALTON, GEORGE
1975 Karl Polanyi's Analysis of Long-Distance Trade and His Wider Paradigm. In J. A. Sabloff and C. C. Lamberg-Karlovsky (eds.), *Ancient Civilization and Trade,* pp. 63-132, Albuquerque: University of New Mexico Press.

DURKHEIM, E.
1933 *Division of Labor in Society* (G. Simpson, trans.). New York: (orig. 1893) Macmillan.

EISENSTADT, S.N.
1963 *The Political Systems of Empires.* New York: Free Press.

FLANNERY, K.V.
1972 The Cultural Evolution of Civilizations. *Annual Review of Ecology and Systematics* 3: 399-426.

FORGE, Anthony
1972 Normative Factors in the Settlement Size of Neolithic Cultivators. In P. J. Ucko, R. Tringham and G. W. Dimbleby (eds.), *Man, Settlement and Urbanism,* pp. 363-376, London: Duckworth.

FOSTER, G.M.
1960 Interpersonal Relations in Peasant Society. *Human Organization* 19: 174-178.

FRANKFORT, Henri
1956 *The Birth of Civilization in the Near East.* New York: Doubleday.

HÄGERSTRAND, Torsten
1967 *Innovation Diffusion as a Spatial Process.* Chicago: University of Chicago Press.

HEIDENREICH, C.E.
1971 *Huronia: A History and Geography of the Huron Indians, 1600-1650.* Toronto: McClelland and Stewart.

HO, Ping-ti
1959 *Studies on the Population of China, 1368-1953.* Cambridge: Harvard University Press.

IBN KHALDUN, Abd-ar-Rahman
1967 *The Muqaddimah: An Introduction to History.* Translated by F. Rosenthal, abridged by N. J. Dawood. Princeton: Princeton University Press.

INNIS, Harold
1951 *The Bias of Communication.* Toronto: University of Toronto Press.

JOHNSON, G.A.
1973 *Local Exchange and Early State Development in Southwestern Iran.* Anthropological Papers No. 51. Ann Arbor: Museum of Anthropology, University of Michigan.

KROEBER, A.L.
1955 Nature of the Land-holding Group. *Ethnohistory* 2: 303-314.

LANNING, Edward
1967 *Peru Before the Incas.* Englewood Cliffs: Prentice-Hall.

MACFARLANE, Alan
1970 *Witchcraft in Tudor and Stuart England.* London: Routledge and Kegan Paul.

MURDOCK, George P.
1957 World Ethnographic Sample. *American Anthropologist* 59: 664-687.

NAROLL, Raoul
1956 A Preliminary Index of Social Development. *American Anthropologist* 58: 687-715.

OLMSTEAD, A.T.
1948 *History of the Persian Empire.* Chicago: University of Chicago Press.

OPPENHEIM, A.L.
1964 *Ancient Mesopotamia.* Chicago: University of Chicago Press.

RATHJE, W.L.
1975 The Last Tango in Mayapan: A Tentative Trajectory of Production-Distribution Systems. In J. A. Sabloff and C.C. Lemberg-Karlovsky (eds.), *Ancient Civilization and Trade,* pp. 409-448, Albuquerque, University of New Mexico Press.

RENFREW, Colin
1975 Trade as Action at a Distance: Questions of Integration and Communication. In J. A. Sabloff and C.C. Lamberg-Karlovsky (eds.),*Ancient Civilization and Trade,* pp. 3-59, Albuquerque, University of New Mexico Press.

SAHLINS, M.D.
1968 *Tribesmen.* Englewood Cliffs: Prentice-Hall.

SEGRAVES, B.A.
1974 Ecological Generalization and Structural Transformation of Sociocultural Systems. *American Anthropologist* 76: 530-552.

SERVICE, E.R.
1966 *The Hunters.* Englewood Cliffs: Prentice-Hall.
1971 *Primitive Social Organization: An Evolutionary Perspective.* Second Edition. New York: Random House.
1975 *Origins of the State and of Civilization.* New York: W. W. Norton.

SHIMKIN, D.B.
1973 Models for the Downfall: Some Ecological and Culture-Historical Consideration. In T. P. Culbert (ed.), *The Classic Maya Collapse,* pp. 269-299. Albuquerque: University of New Mexico Press.

SPATH, C.D.
1973 "The Problem of the Calpulli in Classic Nahuatlaca Social Structure". *Journal of the Steward Anthropological Society* 5(1): 25-44.

TRIGGER, B.G.
1963 "Order and Freedom in Huron Society". *Anthropologica* 5: 151-169.
1976 *The Children of Aataentsic: A History of the Huron People to 1660.* Montreal: McGill-Queen's Press.
in press Egypt and the Comparative Study of Early Civilizations. In D. O'Connor (ed.), *Ancient Egypt: Problems of History, Sources and Methods.*

WARNER, Marina
1972 *The Dragon Empress.* London: Weidenfeld and Nicolson.