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THE BIAS OF COMMUNICATION*

THE appearance of a wide range of cultural phenomena at different periods in the history of western civilization has been described by Professor A. L. Kroeber in *Configurations of Cultural Growth* (Berkeley, 1946). He makes suggestive comments at various points to explain the relative strength or weakness of cultural elements but refrains from extended discussion. I do not propose to do more than add a footnote to these comments and in this to discuss the possible significance of communication to the rise and decline of cultural traits. A medium of communication has an important influence on the dissemination of knowledge over space and over time and it becomes necessary to study its characteristics in order to appraise its influence in its cultural setting. According to its characteristics it may be better suited to the dissemination of knowledge over time than over space, particularly if the medium is heavy and durable and not suited to transportation; or to the dissemination of knowledge over space than over time, particularly if the medium is light and easily transported. The relative emphasis on time or space will imply a bias of significance to the culture in which it is imbedded.

Immediately we venture on this inquiry we are compelled to recognize the bias of the period in which we work. An interest in the bias of other civilizations may in itself suggest a bias of our own. Our knowledge of other civilizations depends in large part on the character of the media used by each civilization in so far as it is capable of being preserved or of being made accessible by discovery as in the case of the results of archaeological expeditions. Writing on clay and on stone has been preserved more effectively than that on papyrus. Since durable commodities emphasize time and continuity, studies of civilization such as Toynbee's tend to have a bias toward religion and to show a neglect of problems of space, notably administration and law. The bias of modern civilization incidental to the newspaper and the radio will presume a perspective in consideration of civilizations dominated by other media. We can do little more than urge that we must be continually alert to the implications of this bias and perhaps hope that consideration of the implications of other media to various civilizations may enable us to see more clearly the bias of our own. In any case we will become a little more humble as to the characteristics of our civilization. We can perhaps assume that the use of a medium of communication over a long period will to some extent determine the character

*A paper presented at the University of Michigan on April 18, 1949.

of knowledge to be communicated and suggest that its pervasive influence will eventually create a civilization in which life and flexibility will become exceedingly difficult to maintain and that the advantages of a new medium will become such as to lead to the emergence of a new civilization.

Egyptian civilization appears to have been powerfully influenced by the character of the Nile. Utilization of its periodic floods depended on possibilities of prediction and the unified control of a powerful authority. It has been claimed that the discovery of the sidereal year as early as 4241 B.C. made it possible to work out a calendar avoiding the difficulties of a year dependent on the moon. The discovery and the adoption of a calendar facilitated the establishment of an absolute monarchy and the imposition of the authority of Osiris and Ra, the Nile and the Sun, on upper Egypt. Success of the monarchy in acquiring control over Egypt in terms of space necessitated a concern with problems of continuity or time. The idea of immortality strengthened the position of the monarch. Mummification and construction of the pyramids as devices for emphasizing control over time were accompanied by the development of the art of pictorial representation as part of the funerary ritual and by the emergence of writing. The spoken word, by which the orders of the monarch were given, in itself possessed creative efficiency which in turn was perpetuated in the written word in the tomb. Pictorial decorations became hieroglyphic script. Writing gradually developed toward phoneticism and by the time of Menes (about 3315 B.C.) many picture signs had a purely phonetic value and were regularly spelled out. Autocratic monarchy developed by divine right culminated in the pyramids of about 2850 B.C. Private property disappeared and all arable land became the king's domain.

The monopoly of knowledge centring around stone and hieroglyphics was exposed to competition from papyrus as a new and more efficient medium. Royal authority began to decline after about 2540 B.C. and its decline was probably coincident with the discovery of the solar year by the priestly class as a device to overcome the deficiencies of the sidereal year in which a day was gained each year. The status of the king was lowered from the Great God to the son of Ra. The Ra cult was exalted to the rank of chief god and Heliopolis became the centre of priestly power. Oligarchy succeeded an absolute monarchy. After about 2000 B.C. the masses were admitted to religious rights and immortality and to political rights. The gates of heaven and the jaws of hell were opened and a "most powerful instrument for the domination over men's unruly wills" devised.[1] The increasing use of papyrus and the brush was accompanied by the development of the hieratic character and the emergence of the profession of scribes. Writing and thought were secularized. Administration was extended following the spread of writing and reading. The social revolution involved in a shift from the use of stone to the use of papyrus and the increased importance of the priestly class imposed enormous strains on Egyptian civilization and left it exposed to the inroads of invaders equipped with effective weapons of attack. The Hyksos or Shepherd Kings captured and held Egypt from 1660 to 1580 B.C. The strength of Egyptian cultural elements facilitated reorganization, and mobilization of resources was directed to expulsion of the

[1]V. G. Childe, *What Happened in History* (New York, 1946), p. 150.

invaders. The introduction of the horse and light four-spoked chariots enabled Egyptian rulers not only to expel the Hyksos but also to conquer vast new territories and to build an empire.

An extension of political organization to include peoples of different races and religions reflecting a temporary solution of problems of space in government compelled the king to attempt a solution of problems of continuity. Worship of the solar disc was designed to provide an imperial religion which would overrule distinctions between Egyptians and foreigners. Failure to overcome the hostility of the entrenched priestly class in Egypt was followed by imperial decline and eventually by the subjugation of Egypt by the Assyrians and the Persians. A monopoly of knowledge supported by a difficult script resisted demands for change and brought the Egyptian empire to an end. With abundant supplies of papyrus and the conservative influence of religion on writing, pictographic writing was maintained and the emergence of consonantal signs was largely a result of the introduction of foreign names and words. The spoken word tended to drift away from the written word in spite of the efforts of Akhneton to bring them into closer accord.

In contrast with the civilization of the Nile that of the Euphrates and the Tigris lacked the necessity of unity and was characterized in its early development by a number of small theocratic city states in which the chief priest of the temple was direct representative of the god. Rivers adapted to irrigation were less dependent on the ability to predict time. The growth of city states assumed continuity in time and the development of writing and reading by which the complex systems of accounting could be made intelligible to individuals and to their successors.

Alluvial clay as the medium for writing had implications for Sumerian civilization in the difficulties of transport and the tendency to encourage the development of a decentralized society. The difficulties of writing on moist clay led to the disappearance of pictographs and the emergence of conventional signs or formal patterns of cuneiform. The stylus was developed in relation to the demands of clay. With a language which was largely monosyllabic, signs were introduced to meet the demands of economy and the necessity of uniformity to establish communication between scattered cities. The administration of temple properties and trade implied an emphasis on mathematics in the early development of writing and in turn an emphasis on abstractions.

Accumulation of wealth in temple organizations involved rivalry, warfare between city states, the emergence of a military leader and an army. The problems of control over space in contrast to the success with which problems of time were met in a religious organization necessitated centralization in the hands of a king. Control over large stretches of territory meant delegation of authority and an emphasis on law as a means of offsetting religious jealousies. To the same end old capitals were destroyed and new capitals were built to strengthen the prestige of the king, and the deities of conquered cities were arranged in hierarchies under the deity of the conqueror. The difficulties of political organization were evident in the ultimate breakdown of Sumerian empires and in the success of Semitic invaders, as the advantages of cultural organization were evident in the tenacity of Sumerian institutions under alien

rule. Semitic invaders deified the king and destroyed the position of the chief gods of city states.

The eventual success of Semitic peoples was marked by the ascendancy of Babylon as a new capital and by the reforms of Hammurabi. The centralized power of a monarchy favoured the architecture of palaces, and the use of stone in sculpture and as a medium of writing, particularly of laws designed to establish uniformity over vast empires. The language of the conquerors could not be united to that of the conquered but the signs of the latter were used by the former. The Semitic language was made official by Hammurabi. The spoken word was Semitic but the written word was in the non-Semitic forms of the Sumerians. The conventionalization of written language was hastened by the demands of the conquerors. "The basis of the Sumerian system of writing was word-values, while that of the Accadian method was syllable-values."[2] Sumerian became a fossilized sacred language of priests. Hammurabi developed the territorial state with a centralized system of administration, a common collection of written laws, a common capital, and a common calendar. Trade over a vast territory was facilitated by the use of fixed standards of weights and measures. Mathematics was developed in the use of the sexagesimal system with its enormous advantages in the handling of fractions, advantages still exploited in the currency system of Great Britain, and in the twenty-four hour system which has persisted in the reckoning of time.

A centralized system persisted with modification under the Aryans. Equipped with more efficient instruments of warfare, particularly the horse and the chariot, the invaders captured and dominated Babylon from about 1740 B.C. to the end of the thirteenth century. Political organizations in northern regions without an abundant supply of writing material such as clay were built up but were unable to find an effective solution to problems of time. The Hittites worked out a highly organized central administration with a strong imperial capital and a system of radiating communications but were unable to capture Babylon in their attack about 1150 B.C. The Assyrians succeeded in disrupting the Hittite federation and eventually dominated the Arameans by the use of heavier horses which made possible the introduction of cavalry, and the use of iron which had been developed by the Hittites. Their imperial organization was based on the establishment of provincial governments placed under governors who exacted tribute. Babylonia was captured in 729 B.C. and the religious pantheon subjected to rearrangement under Ashur as the Assyrian god. The power of Babylonian religion and culture was apparent in the difficulties of governing Babylon evident in its destruction in 689 B.C. and in the attempt to develop the prestige of the capital at Nineveh by the building of a library of Sumerian documents. Egypt was invaded and made an Assyrian province in 674 B.C. but the task of governing two powerful and divergent religious centres proved insuperable and Nineveh was destroyed in 612 B.C.

Expansion of the Assyrian empire was accompanied by the subjugation of peoples of different languages, races and cultures, the destruction of Aramean city states, and the practice of deportation on a large scale to stamp out narrow local cultures. As a result of these measures trade increased on a large scale.

[2]See G. R. Driver, *Semitic Writing from Pictograph to Alphabet* (London, 1948), p. 59.

In the twelfth century the camel was domesticated and caravan trade was extended. An enlarged empire facilitated the growth of trade and industry. In turn these developments assumed a more efficient system of writing shown in the increasing dominance of Aramaic.

Monopolies of knowledge to an important extent dominated by priestly organization and protected by complex types of script such as the cuneiform and the hieroglyphic checked the growth of political organization. Escape from these monopolies came from the fringes of Babylonian and Egyptian civilizations in which new languages among primitive peoples demanded simplicity. Semitic peoples in contact with Egypt before 1500 B.C. apparently invented an alphabet in Palestine and perfected it on the Phoenician coast. Access to supplies of papyrus from Egypt and acquaintance with the reed pen enabled marginal peoples to borrow the simplest signs of the Egyptian system and to abandon its complexities. Invasion of the Hyksos apparently created a barrier between the south and the north of Arabia and led to a divergence between Aramaic and Phoenician writing. Aramaic script developed in relation to the demands of an extensive land trade for a concise conventional alphabet and possibly in relation to the use of parchment. The Phoenician script developed in relation to the demands of an extensive maritime trade for an alphabet in relation to the use of papyrus. Sounds of human speech were analysed into primary elements represented by twenty-two consonants.

A flexible alphabet favoured the growth of trade, development of the trading cities of the Phoenicians, and the emergence of smaller nations dependent on distinct languages. Hebrew was probably spoken in Palestine after 1200 B.C. The oral tradition was written down and the sacred character of writing emphasized by the Egyptians was reflected in the writing of the Hebrews. The importance of sculpture to large-scale political and religious organizations was shown in the prohibition of images by the Hebrews. The written letter replaced the graven image. Concentration on the abstract in writing opened the way for an advance from blood relationship to universal ethical standards, to the influence of the prophets in opposition to the absolute power of kings, and to an emphasis on monotheism. Laws were collected and written down in codes. Literature such as is presented in the Old Testament took root and flourished. Destruction of local sanctuaries by Sennacherib was followed by an emphasis on Jerusalem as the single sanctuary after 621 B.C.[3] After the fall of the Assyrian empire the Babylonians extended their control and captured Jerusalem in 586 B.C.

With the advantage of new instruments of war such as the long bow and the long pike and of an improved alphabet, the Persians rapidly built up an empire to take the place of the empire of the Assyrians. As a result of support from the priests Cyrus became king of Babylon in 556 B.C. Cambyses added Egypt to the empire in 525 B.C. The problems of the Assyrians in dominating two divergent religious centres were inherited by the Persians. They were solved in part by a policy of toleration in which subject peoples were allowed to keep their gods and their religions. The Jews were released from captivity in Babylonia in 539 B.C. and Judah became the centre of an effective religious

[3]J. M. P. Smith, *The Origin and History of Hebrew Law* (Chicago, 1931), p. 55.

organization. The Persians developed an elaborate system of administration based on a system of roads and the use of horses to maintain communication by post with the capital. Satrapies were created and three officials, a satrap, a military governor, and a secretary of state, each acting independently of the other and directly responsible to the capital, were appointed. But centralization of power in the hands of the king quickly brought to the fore the problem of administrative capacity and of continuity or the problem of time. Difficulties increased with the tenacious religious centres of Babylonia, Egypt, and Jerusalem and with peoples such as the Greeks located on the fringe of the empire. The introduction of new tactics of warfare enabled Alexander to overthrow the empire in the decisive battles of 333 B.C and 331 B.C. Oriental empires succeeded in organizing vast areas and in solving territorial problems but failed to find a solution to problems of continuity and of time. The empires of Assyria and Persia emphasized control over space but were unable to solve the problems of time in the face of the monopolies of religion in Babylonia and Egypt.

The Phoenician Semitic consonant alphabet was taken over by the Greeks on the north shore of the Mediterranean. Unlike the Aryans in Asia Minor the Greeks escaped the full effect of contact with the civilizations of Egypt and Babylonia. The necessity of crossing water enabled the Greeks to select cultural traits of significance to themselves and to reject others. Without a script they had built up a strong oral tradition centring about the courts of conquering people from the north. The Homeric poems were the work of generations of reciters and minstrels and reflected the demands of generations of audiences to whom they were recited. This powerful oral tradition bent the consonantal alphabet to its demands and used five of the twenty-four letters as vowels. As vowels were equal in value to consonants they were used in each written word. The written language was made into an instrument responsive to the demands of the oral tradition. Introduction of the alphabet meant a concern with sound rather than with sight or with the ear rather than the eye. Empires had been built up on communication based on sight in contrast with Greek political organization which emphasized oral discussion. Greece escaped the problem of worship of the written word which had embarrassed Oriental empires. The delay in the introduction of writing until possibly as late as the beginning of the seventh century, the difficulties of securing large and regular supplies of papyrus from Egypt, and the limitations of stone as a medium combined to protect the oral tradition. No energy was lost in learning a second language and monopolies of knowledge could not be built around a complex script.

The significance of the oral tradition and its vitality in Greek civilization became evident in its influence on the later history of the West. Its power has been such that it becomes impossible for modern Europeans who have participated in the heritage to approach it from an objective point of view. The impact of writing and printing on modern civilization increases the difficulties of understanding a civilization based on the oral tradition. We can perhaps remain content in quoting Renan, "Progress will eternally consist in developing what Greece conceived."

The power of the oral tradition was evident in the Homeric poems and in the adaptability of the hexameter to a wide variation of content. Hesiod's poetry was in sharp contrast with that of Homer. It facilitated the break of the individual from the minstrel tradition. The demands for greater sensitivity were met by the development of elegiac and iambic poetry. With accessibility to papyrus from Egypt in the late seventh and sixth centuries and the use of the lyre as a musical instrument, the position of professional minstrels was weakened. Lyric poetry developed on an impressive scale.

Not only did the strength of the oral tradition bend the alphabet to suit its needs, it also adapted other contributions of earlier civilizations. In the Homeric poems the gods became anthropomorphic deities. The supernatural was replaced by a concern with nature and science. The Ionian philosopher was able to reject the implications of the word as implying a creative art. "And God said" of the Hebrews ceased to be the symbol of creation. The contributions of the Chaldeans after the introduction of an exact system of chronology in 747 B.C. which facilitated a study of the periodic character of celestial phenomena were apparently used by Thales of Miletus to predict the eclipse of May 28, 585 B.C. The Olympian tradition which assumed fixed limits to the power of gods and men emphasized spatial concepts and in turn geometry. The science of nature dominated by geometry involved a concern with the internal properties of things rather than their relations with other things.

A concern with geometry and spatial relations was reinforced by the place of land and the search for land in colonization in Greek life. The results were evident in the evils which followed attempts to monopolize land. The growth of written laws in the colonies and in Athens in the seventh century threatened to impose a heavy load on debtors. But the power of the oral tradition was evident in the effectiveness of a search for means by which freedom might be achieved. It was possible to give individuals such as Draco, Solon, and Cleisthenes power to set up machinery adapted to continuous adjustment. Solon in the tradition of Ionian philosophy sought for universal truths and expressed the conviction that violation of justice involved disruption of the life of the community. The individual became responsible for his actions and the root of authority was destroyed. The rights of creditors engraved on ward stones erected on property were destroyed and the enslavement of labour as a disruptive force avoided. Solon discovered the secret of democracy in "the constitution of the judicial courts out of the whole people" (Bury).

Solon's reforms reflected the increasing significance of trade in contrast to land but their inadequacy became evident in the rise of a commercial class and in turn of tyrants in the sixth century. The Apollonian religion and Ionian philosophy were offset by encouragement of the worship of Dionysus. The tyrants encouraged the arts and in 537 B.C. assembled a collection of oracles to offset the prestige of the temple of Delphi. Increased trade and a concern with money suggested the limitations of an interest in geometry and spatial relations and the necessity of an interest in arithmetic and time. The philosophy of spatial externality involved discreteness and neglected the importance of continuity. The religion of Dionysus was probably modified by the influence of Mithraism from the east and by the Orphic revival. In turn Pythagoras de-

veloped a philosophy of numbers rather than geometry. As a result of these refinements a reconciliation between the Dionysian religion and the Apollonic became possible and the road was opened leading to the overthrow of the tyrants and the reforms of Cleisthenes. Solon had been largely concerned with problems incidental to the importance of land, space, and geometry and Cleisthenes was concerned with problems incidental to the importance of trade, time, and arithmetic. He rescued control over time from the nobles and introduced a solar calendar which governed a definite system of rotation in elections to the councils. The family state was replaced by the city state.

The effectiveness of the oral tradition in the development of the state became evident in the success with which the Greeks checked the expansion of the Persian empire and in the cultural flowering of Athens in the fifth century. A powerful stimulus was given to philosophical speculation by the arrival of Ionian refugees from Miletus. The Dionysiac ritual and the choral lyric as perfected by Pindar provided the background for the development of the drama[4] under Aeschylus, Sophocles, and Euripides. In the second half of the fifth century writing began to make its encroachments on the oral tradition. Nietzsche has pointed to the significance of music, in which the joy of annihilation of the individual was understood, to tragedy. Disappearance of the spirit of music was followed by the decline of tragedy.[5] An increase in laws reflected an interest in prose. Literature in prose increased rapidly after the beginning of the Peloponnesian war. Plays were widely read in the time of Euripides. By the end of the fifth century the boustrophedon style had been abandoned and changed to writing from left to right. The Ionic alphabet was adopted in Athens with the codification and republication of the laws in 403-2 B.C.[6]

An increase in writing in Athens created divergences in the Greek community and accentuated differences particularly with Sparta. The Athenian empire proved unable to meet the strains imposed by diverging cultures. Athenian courts were unable to escape charges of favouritism to democratic states. Interstate co-operation imposed demands which could not be met. The end came with the outbreak of war and the defeat of Athens.

In the fourth century Plato attempted to save the remnants of Greek culture in the style of the Socratic dialogues which in the words of Aristotle stood half way between prose and poetry. In the seventh epistle he wrote, "no intelligent man will ever be so bold as to put into language those things which his reason has contemplated, especially not into a form that is unalterable which must be the case with what is expressed in written symbols." The interest of Aristotle in science was reflected in prose. But neither Aristotle nor Plato thought of a library as a necessity to the city state. It was significant that a library was founded by Aristotle in 335 B.C. and a public library started in 330 B.C. The written tradition had brought the vitality of the oral tradition to an end. In the words of Nietzsche, "Everyone being allowed to read ruineth in the long run not only writing but also thinking."

[4]J. E. Harrison, *Prolegomena to the Study of Greek Religion* (Cambridge, 1908), p. 568.
[5]F. Nietzsche, *The Birth of Tragedy from the Spirit of Music* (Edinburgh, 1923), pp. 120-7.
[6]W. S. Ferguson, *The Treasures of Athena* (Cambridge, 1923), p. 178.

The role of the oral tradition in providing the milieu for the cultural activity of Greece had a profound significance for the history of the west and immediately for the history of Rome. The success with which the problems of time and space were solved had its implications for Roman culture. Greek culture awakened the native forces of Rome. Greek gods and Greek architecture were introduced in the latter part of the sixth century. The struggles for reform in Greece culminating in the work of Draco, Solon, and Cleisthenes were paralleled at a later date in Rome in the decemvirs code of the twelve tables in 451 and 450 B.C. and in the increasing powers of the plebeians culminating in the appointment of the first plebeian pontifex maximus in 253 B.C.

The comparative isolation of Roman culture from Greece in the fifth and fourth centuries was followed by a fresh invasion of Greek influence in which the rich development of Greek culture checked that of Rome and compelled the latter to concentrate on its own capacities notably in law. Flexibility inherent in the oral tradition was evident in the rise of the plebeians, and in constitutional changes, in the activity of lawyers, and in the creation of machinery designed to meet the increasing demands for adjustment. In 242 B.C the position of a second praetor, *peregrinus*, was introduced to reflect the importance of an expanding trade with alien peoples. Formulae were made more flexible in spite of the spread of writing. Praetors issued new edicts at the beginning of their years of office adapted to changing demands. The *patria potestas* was broken down to make way for the individual, and the contract, that "greediest of legal categories," developed. The concept of property was isolated. *Res privata* necessitated a concern with *res publica* and an interest in the legal concept of the state. By the middle of the first century B.C. the influence of writing became evident in the demand for codes. Laws and precedents in the oral tradition had been largely in men's minds to the time of Cicero. In the Senate the introduction of an official gazette in 54 B.C. compelled speakers to consider a wide public and created a demand for a matter-of-fact style. Limitation of time for pleas in court in 52 B.C. reinforced the tendency. Latin prose which had developed in relation to the demands of the republic in the speeches of the Gracchi, of Cato, and of Cicero was subjected to the influence of writing.[7] The oral tradition absorbed the philosophy of teachers of Stoicism from the east and law was subjected to the demands of universality. Custom was criticized, the religious and ceremonial character of law was weakened, equality was promoted, harshness mitigated, and the factor of intent emphasized.

The adaptability of Roman law in the oral tradition facilitated the extension of the Roman empire which followed the success of Roman arms. Wars with Carthage brought Rome into conflict with Hellenistic kingdoms and into contact with Greek culture. The Antigonids who succeeded Alexander in Macedonia gradually changed Greek city states into municipalities but continued difficulties enabled Rome to destroy the Achaean league in 168 B.C. and to dominate Greece and Macedonia. The Ptolemies inherited the problems of political control in Egypt. They created a new capital at Alexandria, a large

[7]"The build of the Roman sentence was but another consequence of Rome's battles which in giving her conquests forced her people as a nation to think administratively" (Spengler).

library and a new god Serapis to offset the influence of the priestly class at Thebes. The demotic system and the use of the pen were encouraged at the expense of the hieratic system and the brush. As Rome acquired control over Egypt she adopted the policies of the Ptolemies. The Attalids built up a library at Pergamum to offset the prestige of the Ptolemies and, prevented from using papyrus by prohibitions on export, began the use of parchment on a large scale. Friendly relations with Rome were evident in the transfer of the *Magna Mater* in 204 B.C. The Seleucids, inheriting the problems of the Persian empire of dominating the Persian, Babylonian, and Hebrew religions, attempted to introduce the city state as an instrument of government but failure was evident in the ultimate collapse of the kingdom. Rome fell heir to the unfortunate legacy.

As a result of expansion to the east Rome felt the full effects of Greek cultural achievements. Libraries were brought from Greece. Supplies of papyrus were available from Egypt. A book trade was developed and public and private libraries constructed. The spread of writing brought an interest in the codification of laws. Bureaucratic administration emerged. The republic was replaced by the empire. The emperor began to face the problems of empire which had been faced by earlier civilizations and to rely on solutions which had been developed in the east. Emperor worship gradually became more important. The dynastic problem which had menaced the attempts of former absolute monarchs to establish control over time strengthened the position of the army and a bureaucratic administration. New dynasties relied to an increasing extent on the prestige of Greece.

Under the influence of law the individual had been separated from the family. With the increasing rigidity of codes in the empire the individual turned to eastern religions. Efforts to exclude alien religions gradually broke down. The scrupulous fear of the gods which in the words of Polybius kept the Roman empire together was no longer adequate.[8] Attempts of the nobility to maintain the traditional religion of the state against new tendencies meant leading a class against the masses and conflict with the "religious feelings of those lacking social privilege" (Weber).[9] Military campaigns in the east were followed by the spread of Mithraism and in 274 A.D. Aurelian dedicated a shrine to the god *Sol Invictus*. Recognition of an eastern religion as a basis of political support brought a revival of the hostility of Hellenism and compelled the emperor to accept the support of a religion more acceptable to Greek demands. Unable to provide a link between Greece and Persia since the Greeks refused to accept an absolute emperor Rome was compelled to set up a model similar to that of Persia in Constantinople. In turn the demands of bureaucracy were reflected in the division of the empire between the Latin West and the Greek East. The Illyrian mountains prevented the establishment of a capital linking the Latin and the Hellenic provinces as the Alps were later to prevent the establishment of a capital uniting the German and Italian divisions of the empire.[10]

[8]T. R. Glover, *The Conflict of Religions in the Early Roman Empire* (London, 1932), p. 17.
[9]Franz Altheim, *A History of Roman Religion* (London, 1938), p. 330.
[10]Vaughan Cornish, *The Great Capitals: An Historical Geography* (London, 1923), p. 140.

The bureaucratic development of the Roman empire and success in solving problems of administration over vast areas were dependent on supplies of papyrus. The bias of this medium became apparent in the monopoly of bureaucracy and its inability to find a satisfactory solution to the problems of the third dimension of empires, namely time. A new medium emerged to offset the limitations of papyrus. The handicaps of the fragile papyrus roll were offset by the durable parchment codex. With the latter the Christians were able to make effective use of the large Hebrew scriptures and to build up a corpus of Christian writings. The contributions of Alexandrian scholars in translating the Hebrew scriptures into Greek and the development of a Christian centre of learning at Caesarea after 231 A.D. offset the influence of a Babylonian priesthood, which had been encouraged by the Seleucids to check the influence of Persian religion, and which had been reconciled with Persian religion after the fall of Babylon in 125 A.D. Support of these religions to the Sassanid dynasty after 228 A.D. checked the spread of the Roman empire and compelled Constantine to select a new capital in Constantinople in 330 from whence he could command the interest of a Christian population. The problem of the Roman empire in relation to time was solved by the support of religion in the Christian church. The cumulative bias of papyrus in relation to bureaucratic administration was offset by an appeal to parchment as a medium for a powerful religious organization. Recognition of Christianity was followed by the drastic suppression of competing pagan cults.

The attempt of emperors to build up Constantinople as the centre of the civilized world especially after the fall of the Western Empire in 476 A.D. by establishing a large library and producing a code of civil law created friction with Rome and with Alexandria. Justinian's *Digest* carried in its prefix a description of law identical with that of Demosthenes, namely an invention and gift of the gods, the opinion of sensible men, the restitution of things done amiss voluntary and involuntary, and a general compact of a state in accordance with which it is proper that all in that state should live.[11] But geographical separation reinforced differences in religion and exposed the Eastern Empire to the attacks of the Persians and in turn to the Arabs.

The spread of Mohammedanism cut off exports of papyrus to the east and to the west. The substitution of parchment in the west coincided roughly with the rise of the Carolingian dynasty and the decline of the Merovingians. Papyrus was produced in a restricted area and met the demands of a centralized administration whereas parchment as the product of an agricultural economy was suited to a decentralized system. The durability of parchment and the convenience of the codex for reference made it particularly suitable for the large books typical of Scriptures and legal works. In turn the difficulties of copying a large book limited the numbers produced. Small libraries with a small number of large books could be established over large areas. Since the material of a civilization dominated by the papyrus roll had to be recopied into the parchment codex, a thorough system of censorship was involved. Pagan writing was neglected and Christian writing emphasized. "Never in the world's

[11]J. L. Myers, *The Political Ideas of the Greeks* (New York, 1927), pp. 308-16.

history has so vast a literature been so radically given over to destruction."[12] "Whatever knowledge man has acquired outside Holy Writ, if it be harmful it is there condemned; if it be wholesome it is there contained" (St. Augustine).[13] The ban on secular learning gave a preponderance to theological studies and made Rome dominant.[14] The monopoly of knowledge centring around parchment emphasized religion at the expense of law.

Parchment as a medium was suited to the spread of monasticism from Egypt throughout western Europe. St. Benedict founded a monastery at Monte Cassino about 520 A.D. and emphasized rules which made the preservation of books a sacred duty. His work followed by that of Cassiodorus gave "a scholarly bent to western monasticism." In spite of these efforts learning declined in Europe. Revival came on the fringes of the West in the independent and self-governing monasteries of Ireland. Missionary zeal led to the establishment of monasteries in Scotland and northern England and early in the seventh century on the continent. The revival gained impetus with the support of Charlemagne and the migration of Alcuin from York. England and northern France were exposed to Danish raids but European monasteries had acquired transcriptions from English codices and supplemented them with those from Rome. Durable parchment books could be moved over long distances and transferred from regions of danger to regions of safety.

In the Byzantine empire attempts to check the spread of Mohammedan influence were made by appeals to monophysite influence in the proscription of image worship and in attacks on the drain of monasticism on economic life. Resistance to Mohammedanism in the east strengthened the pressure of Mohammedanism in the west but the dangers were checked by the success of Charles Martel in 732 A.D. The ultimate effects were evident in the division between the east and the west. Encouraged by the success of resistance in the west, the papacy allied itself to the Carolingian line and anathematized the iconoclasts of the east. To recapture the west the Byzantine emperors abandoned the iconoclastic controversy in 775 A.D. In turn Charlemagne forbade the worship of images. The accession of the Empress Irene to the Byzantine throne in 797 enabled Charlemagne and the papacy to regard the throne as vacant under Salic law. Charlemagne was accordingly crowned emperor. The concern of Charlemagne for an efficient administration was reflected in efforts to improve educational institutions under control of the church and in his success in encouraging the development of an efficient uniform script, the minuscule.[15] His contributions toward the unification of Europe were destroyed by recognition of the Teutonic principle of equal division among the heirs. A nucleus of power emerged in Paris following attempts to check the influence of the Danes and in Germany following attempts to defeat the Magyars.

[12]T. K. Osterreich, *Possession Demoniacal and Other, among Primitive Races, in Antiquity, the Middle Ages, and Modern Times* (London, 1930), p. 160.

[13]Benjamin Farrington, *Science and Politics in the Ancient World* (London, 1939), p. 46.

[14]P. H. Lang, *Music in Western Civilization* (New York, 1941), p. 46.

[15]The minuscule was a descendant of papyrus cursive writing which had been submerged by the vellum uncials after the fourth century. See F. G. Kenyon, *The Palaeography of Greek Papyrus* (Oxford, 1899), pp. 1124-5.

Encroachments of the empire on the papacy were followed by reforms in the church and the development of a powerful ecclesiastical organization. Parchment became the medium through which a monopoly of knowledge was built up by religion.

This monopoly of knowledge invited the competition of a new medium, namely paper from China. Discovery of the technique of making paper from textiles provided a medium with which the Chinese, by adaptation of the brush for painting to writing, were able to work out an elaborate system of pictographs. A system of four to five thousand characters was used for ordinary needs "enabling those who speak mutually unintelligible idioms to converse together, using the pencil instead of the tongue."[16] Its effectiveness for this purpose meant the abandonment of an attempt to develop an alphabet system.

An elaborate development of writing supported the position of the scholarly class in administration of the empire. In turn a wide gap between a limited governing class and the mass of the people led to the spread of Buddhism from India. The monopoly of knowledge of the Brahmans in India based on the oral tradition and the limitations of communication had led to the spread of Buddhism with its emphasis on writing and its appeal to the lower classes. After Alexander, Buddhism had been encouraged but decline of Macedonian power brought a revival of the power of the Brahmans and migration of Buddhism to China. Access to supplies of paper in China enabled Buddhists to develop block printing on a large scale. Confucianism gained by the influence of the state and the reproduction of the classics. A script which provided a basis for administration in China and emphasized the organization of an empire in terms of space proved inadequate to meet the demands of time and China was exposed to dynastic problems and to the domination of the Mongols from 1280 to 1368.

The spread of Mohammedanism to the east was followed by introduction to the technique of paper production. After establishment of a capital at Bagdad by the Abassids paper manufacturing expanded and became the basis for an intense interest in learning. The Nestorians excommunicated from the Church had established schools in which Greek and Latin works were translated into Syriac. Closing of the schools in Athens by Justinian in 529 A.D. had been followed by the migration of scholars to Persia. From this background of learning Bagdad became a centre for translators of Greek, Syriac, and Persian works into Arabic.

The prestige of Bagdad provoked a revival of Greek learning in Constantinople and of Latin learning in the west in the ninth century.[17] Revival of Greek learning in Constantinople was followed by the hostility of Rome. Rivalry between the eastern and the western church was accompanied by missionary activity and extension of the activities of the eastern church to Bulgaria. The Scriptures were translated into the Slavic vernacular on the one hand in the east, and translations from Latin into the vernacular discouraged on the other hand in the west. The Cyrillic and the Glagolithic alphabets were invented

[16]Edward Clodd, *The Story of the Alphabet* (New York, 1913), p. 182.
[17]Warner Jaeger, *Humanism and Theology* (Milwaukee, 1943), p. 24.

to represent the sounds of the Slavonic language and to provide the basis for a richer expression.[18] An emphasis on secular learning in Byzantine education widened the breach with Rome and led to final separation of the churches of the east and west in 1054. Decline of the Abassids was accompanied by activity of the Seljuk Turks and the capture of Jerusalem in 1070. The papacy refused to meet the requests of the Byzantine emperor for assistance and organized the crusades. Ultimate failure to maintain control over Jerusalem led crusaders to turn to Constantinople. It became subject to Latin states from 1204 to 1261 when it was recaptured by the Greeks.

Paper production spread from Bagdad to the west. After the capture of Bagdad by the Mongols in 1258, manufacturing was confined to western centres. With its development in Italy in the latter part of the thirteenth century new processes were introduced and a much better quality of paper produced. The art of paper making spread to France in the fourteenth century. Since linen rags were the chief raw material and the large cities provided the chief market for paper, production was determined to an important extent by proximity to cities with access to supplies of water and power. The commercial revolution beginning about 1275 paralleled increasing production of paper. The activity of the commercial cities of Italy weakened the Byzantine empire. Religious prejudice against a product of Arabic origin was broken down and the monopoly of knowledge held by the monasteries of rural districts was weakened by the growth of cities, cathedrals, and universities.

The effects of the introduction of paper suggested by the rise of Bagdad were evident also in the concern with learning among the Mohammedans in Sicily and Spain. Large libraries were collected in Spain and following the recapture of Moorish cities by the Spaniards their contents in philosophy, mathematics, and medicine were made available to Europe. Acquaintance with the writings of Aristotle led to attempts such as those of St. Thomas Aquinas (1227-74) to reconcile classical with Christian teaching. Aristotle as a creator of formal logic could be absorbed in orthodoxy. Attempts of the church to dominate learning in the universities were paralleled by attempts to check the spread of the Scriptures in the vernacular. Persecution of the Waldensians and other heretics and the Albigensian crusades were followed by the creation of new preaching orders, the Dominican and the Franciscan, and the establishment of the Inquisition. Revival of an interest in the study of Roman law in the twelfth century strengthened the position of the emperor but it was offset by the codification of canon law. In spite of this activity the increased use of paper and the growth of trade favoured the development of cities and the position of monarchies. The increasing importance of the vernacular and the rise of lawyers strengthened the position of political at the expense of ecclesiastical organizations. The power of France was evident in the migration of the papacy to Avignon (1308-78) and in the hostility of England. Roman law made little impression in England and the influence of the common law was shown in the jury system and in parliament. Again as a result of the war with France the court encouraged the vernacular. Decline of the monopoly of knowledge based on parchment in which an ecclesiastical organization empha-

[18]D. Diringer, *The Alphabet* (London, n.d.), p. 475.

sized control over time followed the competition of paper which supported the growth of trade and of cities, the rise of vernaculars, and the increasing importance of lawyers, and emphasized the concept of space in nationalism.

Monopolies of knowledge controlled by monasteries were followed by monopolies of knowledge controlled by copyist guilds in the large cities. The high price for large books led to attempts to develop a system of reproduction by machine and to the invention of printing in Germany which was marginal to the influence of copyists. The centralized control of France was less adapted to evasion than the numerous political divisions of Germany. The coarse brown parchment of Germany led to an interest in the use of paper. The beauty of Gothic script in manuscript[19] and its adaptability to printing were other factors emphasizing an interest in the invention with its numerous problems of ink, production of uniform type on a large scale, and a press capable of quick operation. Abundance of paper in Italy and political division similar to Germany led to the migration of printers to Italian cities and to the development of Roman and Italic types. Printing in Paris was delayed until 1469 and in England until even later.

Manuscripts which had accumulated over centuries were reproduced and by the end of the fifteenth century printers became concerned with the possibilities of new markets. Commercialism of the publisher began to displace the craft of the printer. The vernacular offered new authors and new readers. The small book and the pamphlet began to replace the large folios. In England, Caxton avoided the competition of Latin books produced on the continent and attempted to widen his own market. He wrote in the prologue to Eneydos, "and that commyn englysche that is spoken in one shyre varyeth from another. . . . I have reduced and translated this sayd booke in to one englysche, not over rude ne caryous but in suche termes as shall be understanden."[20] In Germany opposition of the German language to scholasticism as it had developed in Paris in the French language implied an emphasis on mystical teaching and the vernacular. The attack on the pride of scholastic philosophy was evident in the words of Thomas à Kempis, "But what is the good of wisdom without the fear of God?"[21] "For lack of training the mind turns to reason" (Henry Adams). German music protected by the Hohenstaufens resisted encroachments from the church. An interest in the vernacular was supplemented by the concern of scholars such as Reuchlin and Erasmus with Hebrew and Greek and led to the translations of Luther and Tyndale of the Bible in German and English. Publication of the Scriptures in the vernacular was followed by new interpretations and by the intensive controversies conducted in pamphlets and sheets which ended in the establishment of Protestantism. Biblical literalism became the mother of heresy and of sects.

Printing activity incidental to the Reformation in Germany was accompanied by repressive measures against heretical publications in France. The authority of the University of Paris stood in contrast to the Frankfort Book Fair and the rise of Leipzig as a publishing centre. Printers migrated from

[19]A. W. Pollard, *Early Illustrated Books* (New York, 1927), pp. 7-8.

[20]Cited G. M. Trevelyan, *English Social History* (London, 1946), p. 124.

[21]Jaeger, *Humanism and Theology*, p. 14.

France to adjacent countries such as Switzerland and the Netherlands and published books to be smuggled back to France. Learning declined in France in the sixteenth century but the vernacular found fresh support in printers shown in the writings of Montaigne and Rabelais. French became an official language after 1539. Its influence in the Huguenot controversies was evident in the Edict of Nantes of 1598, the first acknowledgement of a Roman Catholic country that heretics should be accorded civil rights. A policy of restrictions on publications paralleled a policy encouraging exports of paper. Countries encouraging a free press were subsidized by French mercantilist policies and the difficulties of restricting the smuggling of prohibited literature were increased. In the Empire repression in Antwerp was followed by the migration of printers such as Plantin to Holland and by an intensive development evident in a large-scale type-founding industry. Printing was accompanied by the production of printed sheets and postal services and by the growth of a financial centre at Antwerp. After the destruction of Antwerp in 1576 Amsterdam increased in importance. The Union of Utrecht in 1579 with ample financial resources was able to withstand the demands of the Empire and of France.

In England the absolutism of the Tudors involved suppression of printing but encouragement of the Renaissance and of the Reformation. Abolition of the monasteries and disappearance of clerical celibacy were followed by sweeping educational reforms. The printing press became "a battering ram to bring abbeys and castles crashing to the ground."[22] Freedom from the Salic law made it possible for women to ascend the throne and to encourage the literature of the court. Restrictions on printing facilitated an interest in the drama and the flowering of the oral tradition in the plays of Shakespeare.

By the end of the sixteenth century the flexibility of the alphabet and printing had contributed to the growth of diverse vernacular literatures and had provided a basis for divisive nationalism in Europe. In the seventeenth century France continued to implement a mercantilist policy in suppression of publications and encouragement of exports of paper. Revocation of the Edict of Nantes in 1685 was followed by migration of skilled paper makers and the growth of paper making in England and Holland. Inefficiency in paper making incidental to state interference in France was paralleled by the introduction of more efficient methods in Holland. Refugees from France such as Pierre Bayle and Descartes developed a critical literature and a philosophy which had repercussions in the later criticism of the eighteenth century. In Holland type founding became an industrial enterprise and publishing activity under such firms as the Elzevirs built up markets throughout Europe. In England suppression of printing contributed to the outbreak of civil war. Increase in numbers of booksellers who encouraged printers as a means of reducing costs of publication led inevitably to the production of seditious literature, to renewed suppression, and finally to the outburst of controversial literature of the civil war.[23] Emphasis on the Bible accompanied restrictions on printing and facilitated an attack on Aristotelianism and scholastic philosophy and contributed to an interest in the moderns, the emergence of science, and deism. The

[22]Trevelyan, *English Social History*, p. 58.

[23]H. R. Plomer, *A Short History of English Printing* (New York, 1927), p. 169.

Royal Society founded in 1660 was concerned with the advancement of science and the improvement of the English language as a medium for prose. It demanded a "mathematical plainness of language" and rejection of "all amplifications, digressions and swellings of style."[24]

Suppression of printing limited the attention to language which characterized France. Dictionaries were gradually developed but the English language was not adequate to the precision of the law codes of the continent. Printing and improved communication strengthened a representative system in parliament. Suppression was offset by news letters and the rise of coffee houses. The absolute power of parliament emerged to offset the absolute power of monarchy and annihilated the claims of common law which persisted in the colonies. It became the basis of public credit. The revolution of 1689 was followed by establishment of the Bank of England in 1694. Again the revolution brought an end to the licensing act in 1695. Immediately large numbers of papers were printed and the first daily appeared in 1701. In the Augustan age, Addison and Steele reconciled "wit and virtue after a long and painful separation during which wit had been led astray by profligacy and virtue by fanaticism." Limitations of the hand press led to a political war of pamphlets and to the imposition of a stamp tax in 1712. The excessive burden of a tax on a commodity selling at a very low price compelled printers to undertake compendious works such as weeklies and monthlies and Ephraim Chambers's *Universal Dictionary of Arts and Sciences* which appeared in 1728. Restrictions on political writing hastened the development of other types of literature such as the novel and children's books and the establishment of circulating libraries. The copyright act of 1710 gave protection to publishers but a legal decision of 1774 denying the right to perpetual copyright under common law destroyed control over publications, encouraged large numbers of small publishers to engage in the production of reprints, supported a large second-hand book trade, and compelled large publishers to concentrate on expensive publications. Scottish writers who had not been hampered by the Grub-street of English writing in the early part of the eighteenth century and who had the support of universities and a background of Roman law concentrated on such philosophical speculations as those produced by Hume and Adam Smith. Scottish publishers exploited the limitations of English publishing.[25] Constable was concerned with the publication of the work of Sir Walter Scott and the *Edinburgh Review.*

The decline of political censorship after the fall of Walpole, an increase in the production of paper, escape from the monopoly of Dutch type foundries in the work of Caslon, and increased reliance on advertising following legislation against bill posters were followed by an expansion of newspapers. Resistance of the city of London against the absolute supremacy claimed by parliament supported the activities of Wilkes and Junius in the demand for

[24]M. M. Lewis, *Language in Society* (London, 1947), p. 38.

[25]See L. G. Gates, *Three Studies in Literature* (New York, 1899), pp. 50 ff.; also J. A. Greig, *Francis Jeffery of the Edinburgh Review* (Edinburgh, 1948). On the influence of Roman law on Adam Smith see the Right Honourable Lord Macmillan *Two Ways of Thinking* (Cambridge, 1934), pp. 28-30.

the right to publish debates. Alderman Oliver, a member of parliament, stated that "whenever King, Lords or Commons assume unlimited power I will oppose that power."[26] The press attacked "the triple union of Crown, Lords and Commons against England." The newspaper article displaced the editorial and the essay in the writings of Junius who chose anonymity as it was "by no means necessary that he should be exposed to the resentment of the worst and most powerful men in the country." In spite of the achievement, taxes and threats of libel suits restricted expansion of newspapers and contributed to an interest in romantic literature. The position of deism which had been strengthened by the problems of the church during the revolution was weakened by the attacks of Hume and the way was opened to romanticism and to the religious revivals of Wesley and Whitefield.

The interest in literature which paralleled suppression of newspapers checked the growth of literature in the colonies and compelled an emphasis on newspapers. In the colonies a demand for printers for the publication of laws of the assemblies was followed by an interest in newspapers and in the post office. Printers were concerned with an agitation against restrictions and followed the arguments imported from England. The enormous burden of the stamp tax in 1765 led to successful demands for repeal. Protests of Wilkes and Junius against the supremacy of parliament were elaborated in the colonies and the role of the newspapers in the revolution was recognized in a bill of rights guaranteeing freedom of the press. Reliance on the common law implied a refusal to accept the principle of supremacy of parliament. Inability to find a middle course between absolute dependence and absolute independence broke the first empire. The influence of Roman law evident in an absolute parliament implied a conflict with an emphasis on common law in the colonies.

In France increasing centralization imposed heavy burdens on the administrative capacity of the monarchy. The increasing disequilibrium which followed attempts to export paper and to restrict publications led to increased development of printing in Holland and Switzerland and to continued smuggling of books into France. Attacks of French writers on restrictions became more aggressive in the writings of Voltaire, Diderot, Montesquieu, Rousseau, and others. The Encyclopedia based on Chambers's work in England became a storehouse of ammunition directed against the monarchy. With the outbreak of revolution newspapers became the artillery of ideas. After the revolution Napoleon introduced a system of censorship. Throughout the nineteenth century the long struggle for freedom of the press was marked by advance culminating in the revolution of 1830, by recession under Louis Napoleon, and by advance under the republic. Journalists played an active role as politicians with disturbing effects on the political history of France.

Fear of the effects of the French revolution in England was evident in the severely repressive taxes on the press.[27] Introduction of machinery in the manufacture of paper and in the printing press and restrictions on newspapers led

[26]Michael Macdonagh, *The Reporters Gallery* (London, n.d.), p. 236.

[27]See A. Aspinall, *Politics and the Press, 1780-1850* (London, 1949); and W. H. Wickwar, *The Struggle for the Freedom of the Press, 1819-1832* (London, 1928).

to an emphasis on media concerned with material other than news. Periodicals, magazines, and books increased in importance and brought a demand for the reduction of taxes and cheap postage. The moderation of the French revolution of 1830 preceded the bloodless revolution of the Reform Acts.[28] In the second half of the century the monopoly of *The Times* protected by taxes disappeared and newspapers increased in number and circulation in London and in the provinces. The monopoly of London strengthened by the railway was destroyed by the invention of the telegraph which encouraged provincial competition after 1868.[29] The success of German education, regarded as responsible for the defeat of Austria in 1866 and of France in 1870, led to the Education Act of 1870 and the creation of a large number of new readers. Newnes and Northcliffe exploited the new market in the new journalism. The monopoly of the circulating library disappeared before the new periodicals, cheap editions of novels, and literary agents.

An emphasis on literature in England in the first half of the nineteenth century incidental to the monopoly of the newspaper protected by taxes on knowledge and absence of copyright legislation in the United States compelled American writers to rely on journalism.[30] Publishers in New York such as Harpers after the introduction of the steamship line drew on the vast stores of English literature and made them available to the enormous reading public of the United States.[31] Publishers and paper dealers such as Cyrus W. Field and Company opposed proposals for international copyright in 1852.[32] The emphasis on news which consequently characterized American journalism protected by the Bill of Rights supported the development of technological inventions in the fast press, the stereotype, the linotype, and the substitution of wood for rags. As in England the telegraph destroyed the monopoly of political centres and contributed, in destroying political power, to the outbreak of the Civil War. Technological development had its effects in the new journalism in England and on the continent. The varying effects of technological change spreading from the United States destroyed the unity of Europe and contributed to the outbreak of the First World War. The British according to Bismarck were unable to participate in the work of the intimate circle of European diplomacy because of responsibility to parliament and the inability increased with the new journalism.[33] The attitude of Bismarck expressed in the remark, "never believe a statement until you see it contradicted,"[34] was in contrast with Anglo-American journalism. The great pioneers of intellectual life in Germany left a legacy of leadership assumed after about 1832 by the state culminating in a deadening officialdom.[35] Northcliffe in the search for

[28]Emery Neff, *A Revolution in European Poetry, 1600-1900* (New York, 1940), p. 110.

[29]James Samuelson (ed.), *The Civilization of Our Day* (London, 1896), p. 277.

[30]E. L. Bradsher, *Mathew Carey, Editor, Author and Publisher: A Study in American Literary Development* (New York, 1912), p. 79; and L. F. Tooker, *The Joys and Tribulations of an Editor* (New York, 1923), pp. 3-10.

[31]J. H. Harper, *The House of Harper* (New York, 1912), p. 89.

[32]*Ibid.*, p. 108.

[33]J. A. Spender, *The Public Life* (London, 1925), p. 48.

[34]Harold Spender, *The Fire of Life: A Book of Memoirs* (London, n.d.), p. 36.

[35]Viscount Haldane, *Selected Addresses and Essays* (London, 1928), p. 22.

news made unprecedented use of cables and private wires and exploited Paris as a vast and cheap source of journalistic wealth with the result that French influence became more powerful.[36] The diplomatic institutions and techniques of an age of dynastic cabinet politics failed to work in a situation characterized by the press, electrical communications, mass literacy, and universal suffrage.[37] The treaty of Versailles registered the divisive effects of the printing industry in its emphasis on self-determination. The monopoly of knowledge centring around the printing press brought to an end the obsession with space and the neglect of problems of continuity and time. The newspaper with a monopoly over time was limited in its power over space because of its regional character. Its monopoly was characterized by instability and crises. The radio introduced a new phase in the history of western civilization by emphasizing centralization and the necessity of a concern with continuity. The bias of communication in paper and the printing industry was destined to be offset by the bias of the radio. Democracy which in the words of Guizot sacrificed the past and the future to the present was destined to be offset by planning and bureaucracy.

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[36]Max Pemberton, *Lord Northcliffe: A Memoir* (New York, n.d.), p. 62.

[37]O. J. Hale, *Publicity and Diplomacy, with Special Reference to England and Germany, 1890-1914* (New York, 1940), p. 209.