

**\* A Distributed Proofreaders Canada Ebook \***

This ebook is made available at no cost and with very few restrictions. These restrictions apply only if (1) you make a change in the ebook (other than alteration for different display devices), or (2) you are making commercial use of the ebook. If either of these conditions applies, please check with an FP administrator before proceeding.

This work is in the Canadian public domain, but may be under copyright in some countries. If you live outside Canada, check your country's copyright laws. **If the book is under copyright in your country, do not download or redistribute this file.**

*Title:* Minerva's Owl

*Author:* Harold Innis (1894-1952)

*Date of first publication:* 1947

*Place and date of edition used as base for this ebook:* Toronto: University of Toronto Press, 1948

*Date first posted:* 4 March 2007

*Date last updated:* August 18, 2014

Faded Page ebook#20140835

This ebook was produced by: Iona Vaughan and Mark Akrigg

*Presidential Address*

*Reprinted from the*

*Proceedings of the Royal*

*Society of Canada, 1947*

# Minerva's Owl

**HAROLD A. INNIS**

**Ph.D., D.Ec.Sc., LL.D.**

**UNIVERSITY OF TORONTO PRESS: 1948**

# Minerva's Owl

I have taken the title from that striking sentence of Hegel "Minerva's owl begins its flight only in the gathering dusk..." in reference to the crystallization of Greek culture which accompanied major classical writings in the period that saw the decline and fall of Grecian civilization. The richness of that culture, its uniqueness, and its influence on the history of the West suggest that the flight began not only in the dusk of Grecian civilization but also in the civilization of the West.

I have attempted to suggest that Western civilization has been profoundly influenced by communication and that marked changes in communication have had important implications in changes in civilization. Briefly this address is divided into the following periods in relation to media of communication; clay and the stylus from the beginnings of civilization in Mesopotamia; papyrus and the brush to the Graeco-Roman period and the reed pen to the retreat of the empire from the west; parchment and the pen to the tenth century or the dark ages, and overlapping with paper, the latter becoming more important with the invention of printing; paper and the brush in China, and paper and the pen in Europe before the invention of printing or the Renaissance; paper and the printing press under handicraft methods to the beginning of the nineteenth century, or from the Reformation to the French Revolution; paper produced by machinery and the application of power to the printing press since the beginning of the nineteenth century to the manufacture from wood in the second half of the century; celluloid in the growth of the cinema and finally the radio in the second quarter of the present century, or the new outbreak of savagery. In each period I have attempted to trace the implications of the media of communication for the character of knowledge and to suggest that a monopoly or an oligopoly of knowledge is built up to the point that equilibrium is disturbed.

An oral tradition implies freshness and elasticity but students of anthropology have pointed to the binding character of custom in primitive cultures. A complex system of writing becomes the possession of a special class and tends to support aristocracies. A simple flexible system of writing admits of adaptation to the vernacular but slowness of the adaptation facilitates monopolies of knowledge and hierarchies. Reading in contrast with writing implies a passive recognition of the power of writing. Inventions in communication compel realignments in the monopoly or the oligopoly of knowledge. A monopoly of knowledge incidental to specialized skill in writing which weakens contact with the vernacular will eventually be broken down by force. In the words of Hume: "As force is always on the side of the governed, the governors have nothing to support them but opinion. It is, therefore, on opinion that government is founded; and this maxim extends to the most despotic and the most military governments as well as to the most free and most popular." The relation of monopolies of knowledge to organized force is evident in the political and military histories of civilization. An interest in learning assumes a stable society in which organized force is sufficiently powerful to provide sustained protection. Concentration on learning implies a written tradition and introduces monopolistic elements in culture which are followed by rigidities and involve lack of contact with the oral tradition and the vernacular. "Perhaps in a very real sense, a great institution is the tomb of the founder." "Most organizations appear as bodies founded for the painless extinction of ideas of the founders." "To the founder of a school everything may be forgiven except the school." <sup>[1]</sup> This change is accompanied by a weakening of the relations between organized force and the vernacular and collapse in the face of technological change which has taken place in marginal regions which have escaped the influence of a monopoly of knowledge. On the capture of Athens by the Goths in 267 A.D. they are reported to have said, "Let us leave the Greeks these books for they make them so effeminate and unwarlike."

With a weakening of protection of organized force, scholars put forth greater efforts and in a sense the flowering of the culture comes before its collapse. Minerva's owl begins its flight in the gathering dusk not only from classical Greece but in turn from Alexandria, from Rome, from Constantinople, from the republican cities of Italy, from France, from Holland, and from Germany. It has been said of the Byzantine Empire that "on the eve of her definite ruin, all Hellas was reassembling her intellectual energy to throw a last splendid glow." <sup>[2]</sup> "The perishing empire of the fourteenth and fifteenth centuries especially the city of Constantinople was a centre of ardent culture, both intellectual and artistic." <sup>[3]</sup> In the regions to which Minerva's owl takes flight the success of organized force may permit a new enthusiasm and an intense flowering of culture incidental to the migration of scholars engaged in Herculean efforts in a declining civilization to a new area in which enthusiasm and possibilities of protection are combined. The success of organized force is dependent on an effective combination of the oral tradition and the vernacular in public opinion with technology

and science. An organized public opinion following the success of force becomes receptive to cultural importation.

Burckhardt has stated: "It may be, too, that those great works of art had to perish in order that later art might create in freedom. For instance, if, in the fifteenth century, vast numbers of well-preserved Greek sculptures and paintings had been discovered, Leonardo, Raphael, Titian and Correggio would not have done their work, while they could, in their own way, sustain the comparison with what had been inherited from Rome. And if, after the middle of the eighteenth century, in the enthusiastic revival of philological and antiquarian studies, the lost Greek lyric poets had suddenly been rediscovered, they might well have blighted the full flowering of German poetry. It is true that, after some decades, the mass of rediscovered ancient poetry would have become assimilated with it, but the decisive moment of bloom which never returns in its full prime, would have been irretrievably past. But enough had survived in the fifteenth century for art, and in the eighteenth for poetry, to be stimulated and not stifled...." [4] David Hume wrote that "when the arts and sciences come to perfection in any state, from that moment they naturally or rather necessarily decline and seldom or never revive in that nation where they formerly flourished.... Perhaps it may not be for the advantage of any nation to have the arts imported from their neighbours in too great proportion. This extinguishes emulation and sinks the ardour of generous youth." [5]

Dependence on clay in the valleys of the Euphrates and the Tigris involved a special technique in writing and a special type of instrument. The reed stylus and cuneiform writing on clay involved an elaborate skill, intensive training, and concentration of durable records. The temple with its priesthood became the centre of cities. Invasions of force based on new techniques chiefly centring around the horse, first in the chariot and later in cavalry, brought the union of city states, but a culture based on intensive training in writing rendered centralized control unstable and gave organized religion an enormous influence. Law emerged to restrain the influence of force and of religion. Successful imperial organization came with the dominance of force represented in the Pharaoh in Egypt though the Egyptian Empire depended on cuneiform for its communications. It was followed by the Assyrian Empire, the Persian Empire, and the Alexandrian Empire.

While political organization of oriental empires followed the Egyptian model, religious organization was powerfully influenced by Babylonia as was evident in the traditions of the Hebrews in the marginal territory of Palestine. With access to more convenient media such as parchment and papyrus and to a more efficient alphabet the Hebrew prophets gave a stimulus to the oral and the written tradition which persisted in the scriptures, the Jewish, Christian, and Mohammedan religions. Written scriptures assumed greater accessibility and escaped from the burdens of the temples of Babylonian and Assyrian Empires. The influence of religion in the Babylonian and Assyrian Empires was evident also in the development of astronomy, astrology, and a belief in fate, in the seven-day week, and in our sexagesimal time system.

The Egyptians with an abundance of papyrus and the use of the brush had worked out an elaborate system of writing and the Babylonians with dependence on clay and the stylus had developed an economical system of writing. Semitic peoples borrowed the Sumerian system of writing but retained their language and in turn improved the system of writing through contacts with the Egyptians. The Phoenicians as a marginal Semitic people with an interest in communication and trade on the Mediterranean improved the alphabet to the point that separate consonants were isolated in relation to sounds. The Greeks took over the alphabet about the ninth century and included vowels by which it became a flexible instrument suited to the demands of a flexible oral tradition. The flowering of the oral tradition was seen in provision for public recitations in the Panathenea of the *Iliad* and the *Odyssey* and in the birth of tragedy from about 500 to 400 B.C.

An intense and sustained interest in Greek civilization by a wide range of scholars has pointed to numerous factors leading to its cultural flowering. Ionian culture reflected the contact of a vigorous race with the earlier rich Minoan civilization and the emergence of a potent oral tradition. This tradition absorbed and improved the instruments of a written tradition built up on the opposite side of the Mediterranean. Toynbee has emphasized the limitations of migration across bodies of water and the significance of those limitations to cultural borrowing.

In the written tradition the improved alphabet made possible the expression of fine distinctions and light shades of meaning. Opening of Egyptian ports to the Greeks in 670 B.C. and establishment of Naucratis in 650 B.C. made papyrus more accessible. The burst of Greek lyric poetry in the seventh century has been attributed to the spread of cheap papyrus. Jaeger has shown the significance of prose to law and the city state. The flexibility of law shown in the major reforms centring around the names of Dracon (621 B.C.), Solon, and Cleisthenes was possible before a written tradition

had become firmly entrenched, but written codes not only implied uniformity, justice, and a belief in laws but also an element of rigidity and necessity for revolution and drastic change. No effective device was developed to facilitate the constant shifting power and as in present-day Russia ostracism was essential. Laws weakened the interest in punishment in another world for those who escaped justice in this. Solon reflected the demands of an oral tradition for flexibility by providing for the constitution of judicial courts from the people, and Cleisthenes gave the whole body of citizens a decisive part in the conduct of human affairs. Political science became the highest of the practical sciences. Political freedom was accompanied by economical freedom particularly with the spread in the use of coins after 700 B.C. To quote Mirabeau: "The two greatest inventions of the human mind are writing and money—the common language of intelligence and the common language of self-interest."

Encroachment from the centralized empires of the east through the Persians led to the flight of Ionians, who had inherited to the fullest degree the legacies of earlier civilizations, from Miletus, and to an interest in science and philosophy in Athens. Ionians developed the great idea of the universal rule of law, separated science from theology, and rescued Greece from the tyranny of religion. The self was detached from the external object. With this came limitations reinforced by an interest in music and geometry which implied concern with form and measure, proportion and number in which relations between things in themselves were neglected. But in spite of this neglect an appeal to atomism and science had been made and through this Europeans worked themselves out of the formal patterns of the Orient. The Ionian alphabet was adopted in Athens in 402-3 B.C. suggesting the demands of the city for greater standardization in writing. Prose was brought to perfection by the middle of the fourth century and Plato sponsored its supremacy by ruling out the poets and by his own writing. When Athens became the centre of the federation in 454 B.C. the way was opened to greater flexibility in law notably through the contributions of orators to the improvement of prose from 420 to 320 B.C. By 430 a reading public had emerged in Athens and Herodotus turned his recitations into book form. The spread of writing checked the growth of myth and made the Greeks sceptical of their gods. Hecateus of Miletus could say, "I write as I deem true, for the traditions of the Greeks seem to me manifold and laughable." Xenophanes wrote that "if horses or oxen had heads and could draw or make statues, horses would represent forms of the gods like horses, oxen like oxen." Rapid expansion in the variety and volume of secular literature became a check to organized priesthood and ritual.

Socrates protested against the materialistic drift of physical science and shifted from a search for beginnings to a search for ends. Concentrating on human life he discovered the soul. Absolute autocracy of the soul implied self-rule. Virtue is knowledge. "No one errs willingly." After the fall of Athens and the death of Socrates, Plato turned from the state. Socrates had been profoundly influenced by the advance of medical science but Plato gave little attention to experimental science. Collapse of the city state and of religion attached to the city state was followed by conscious individualism. The results were evident in complexity, diversity, and perfection in a wide range of cultural achievements. The significance of the oral tradition was shown in the position of the assembly, the rise of democracy, the drama, the dialogues of Plato, and the speeches including the funeral speech of Pericles in the writings of Thucydides. Hegel wrote regarding Pericles: "Of all that is great for humanity the greatest thing is to dominate the wills of men who have wills of their own." The Greeks produced the one entirely original literature of Europe. The epic and the lyric supported the drama. Democracy brought the comedy of Aristophanes. Poetics and the drama had a collective purgative effect on society but with decline of the stage, oratory and rhetoric reflected the influence of an individual.

The oral tradition emphasized memory and training. We have no history of conversation or of the oral tradition except as they are revealed darkly through the written or the printed word. The drama reflected the power of the oral tradition but its flowering for only a short period in Greece and in England illustrates its difficulties. A simplified and flexible alphabet and the spread of writing and reading emphasized logic and, consequently general agreement. The spread of writing widened the base by which the screening of ability could take place. The feudal hierarchy of Greece was weakened by an emphasis on writing which became a type of intelligence test. A writing age was essentially an egoistic age. Absorption of energies in mastering the technique of writing left little possibility for considering the implications of the technique.

Richness of the oral tradition made for a flexible civilization but not a civilization which could be disciplined to the point of effective political unity. The city state proved inadequate in the field of international affairs. Consequently it yielded to force in the hands of the Macedonians though the genius of Greek civilization was again evident in the masterly conquests of Alexander. The heavy infantry of Greece and the navy were no match for the light infantry and cavalry which struck from the rear. The first of the great sledge-hammer blows of technology in which force and the vernacular hammered monopolies of knowledge into malleable form had been delivered. The Alexandrian Empire and

its successors favoured the organization of Alexandria as the cultural centre of the Mediterranean.

Aristotle bridged the gap between the city state and the Alexandrian Empire. He rejected the dualism of Plato and affirmed the absolute monarchy of the mind. He marked the change "from the oral instruction to the habit of reading." The immortal inconclusiveness of Plato was no longer possible with the emphasis on writing. It has been said that taught law is tough law so taught philosophy is tough philosophy. The mixture of the oral and the written tradition in the writings of Plato enabled him to dominate the history of the West. Aristotle's interest in aesthetics reflected a change which brought the dilettante, taste, respectability, collectomania, and large libraries. As an imperial centre Alexandria emphasized the written tradition in libraries and museums. The scholar became concerned with the conservation and clarification of the treasures of a civilization which had passed. Minerva's owl was in full flight. Other imperial centres such as Pergamum (197-159 B.C.) became rivals in the development of libraries and in the use of parchment rather than papyrus. The period had arrived when a great book was regarded as a great evil. Books were written for those who had read all existing books and were scarcely intelligible to those who had not. Literature was divorced from life. In the words of Gilbert Murray, Homer in the Alexandrian period came under "the fatal glamour of false knowledge diffused by the printed text." Alexandria broke the link between science and philosophy. The library was an imperial instrument to offset the influence of Egyptian priesthood. Greek advances in mathematics were consolidated and the work of Aristotle as the great biologist extended.

Writing with a simplified alphabet checked the power of custom of an oral tradition but implied a decline in the power of expression and the creation of grooves which determined the channels of thought of readers and later writers. The cumbersome character of the papyrus roll and its lack of durability facilitated revision and restricted the influence of writing at least until libraries were organized under an imperial system. Greece had the advantage of a strong oral tradition and concentration on a single language. With the strong patriarchal structure of European peoples she resisted on the one hand the power of the Babylonian priesthood and goddesses and on the other of the Egyptian monarchy as reflected in the pyramids.

As the Greeks had absorbed an earlier culture and adapted it to their language so the Latins absorbed Etruscan culture. The absorptive capacity of language was significant in the history of Greece, Rome, and England. The contact of language with an earlier developed culture without its complete submergence implied an escape from the more subtle aspects of that culture. It facilitated the rise of philosophy and science in Greece in contrast with religion. The civilization of Greece emphasized unity of approach but Rome absorbed rhetoric and excluded science. In the East, Persian and Arabic literature excluded the influence of Greek literature but absorbed science. Pervasiveness of language becomes a powerful factor in the mobilization of force particularly as a vehicle for the diffusion of opinion among all classes. Language exposed to major incursions became more flexible, facilitated movement between classes, favoured the diffusion of technology, and made for rapid adjustment.

Roman force supported the extension of the Republic to Carthage and Corinth in 146 B.C. and was followed in turn by the Hellenistic cultural invasion of Rome after 159 B.C. Inclusion of Egypt in her possessions widened the gap by which Eastern influences penetrated Rome. Greek literature collected and edited in Alexandria had its impact on Rome. Roman literature was "over-powered by the extremely isolated and internally perfect Greek literature." Greek became a learned language and smothered the possibilities of Latin. Access to supplies of papyrus brought the growth of libraries, and of offices of administration. Hellenistic civilization warped the development of Rome toward an emphasis on force, administration, and law. While Cicero contributed to the perfection of Latin prose he followed the model set up by Isocrates. As the Empire followed the Republic, restrictions were imposed on the Senate and on the oral tradition. Disappearance of political activity through censorship meant the increased importance of law and rhetoric. The literature of knowledge was divorced from the literature of form which eventually became panegyric. Oratory and history were subordinated to the state, the theatre was displaced by gladiatorial games. "It was jurisprudence, and jurisprudence only which stood in the place of poetry and history, of philosophy and science." <sup>[6]</sup> Interest in Greek in Rome halted literature and accentuated the interest in the codification of law.

The spread of militarism implied an emphasis on territorial rather than personal interests. It meant a release of individual self-assertion and the temporary overthrow of customary restraints. Blood relationship and the dominance of the group over the individual were not suited to the military efficiency of the Roman legion. The extent of the Roman Empire in contrast with the city state necessitated written law as a means of restraining the demands of force. The patriarchal society of people along the north shore of the Mediterranean had withstood the effects of the earlier

civilizations in the case of the Greeks who solved their problems partly by colonization. In Rome the rise of a professional legal class particularly with the decline of the Republic and the Senate, and the separation of judicial power from legislative and executive powers, was marked by systematic development of law which weakened the power of *patria potestas*. Force and law weakened the patriarchal system. Family relations were created artificially, a development concerning which Maine wrote that there was "none to which I conceive mankind to be more deeply indebted." Legal obligation was separated from religious duty. The contract was developed from the conveyance and as a pact plus an obligation was, again in the words of Maine, "the most beautiful monument to the sagacity of Roman juriconsults." Written testimony and written instruments displaced the cumbersome ceremonies of the oral tradition. It has been said of Roman law that the indestructibility of matter is as nothing compared to the indestructibility of mind. While Roman law was flexible in relation to the demands of Mediterranean trade and in the hands of the bar and the lecturers rather than the bench it began to harden under the influence of Greek scholars and commentators and eventually was subjected to elaborate codes. "It is only when people begin to want water that they think of making reservoirs, and it was observed that the laws of Rome were never reduced into a system till its virtue and taste had perished." [\[7\]](#) Papyrus and the roll limited the possibilities of codification of Roman law.

The increasing rigidity of law and the increasing influence of the East shown in the emergence of the absolute emperor opened the way to the penetration of Eastern religions. The political animal of Aristotle became the individual of Alexander. Roman architecture, Roman roads, and Roman law enhanced the attraction, accessibility, and prestige of Rome. The Alexandrian tradition of science and learning implied not only a study of the classics of Greece but also a study and translation of the Hebrew scriptures. Hebraic literature had arisen among a people who had been trampled over by the armies of oriental empires and exposed during periods of captivity to the influence notably of Persian religion with its conceptions of immortality and of the devil. The law and the prophets had been incorporated in holy scriptures. Under the influence of monotheism writings had become sacred. The written bible assumed monotheism, doctrine, and priesthood. "No book, no doctrine, no doctrine, no book" (De Quincy). Pagan cultures lacked the act of thanksgiving and the act of confession. Greece and Rome as polytheistic cultures had supported an empire. Bibles were not suited to empires. Greek philosophy was represented by the teacher and Eastern religions by the priests and the prophets. "Thus saith the Lord." Zeno the Stoic had introduced the latter note into Greek philosophy and its influence was evident in the absorption of Stoicism in Roman law. "The exile of the Jews and the defeat of Greece brought Christianity and Stoicism. All great idealisms appear to spring from the soil of materialistic defeat." [\[8\]](#)

The development of the Empire and Roman law reflected the need for institutions to meet the rise of individualism and cosmopolitanism which followed the break-down of the *polis* and the city state. The Roman Empire opened the way to a rich growth of associations and the spread of religious cults. Organized religion emerged to prevent the sense of unity implied in Greek civilization. A relatively inflexible alphabet such as Hebrew and limited facilities for communication narrowed the problem of education to a small highly-trained group or special class. Its capacities were evident in the literary achievements of the Old Testament. The dangers became apparent in the difficulty of maintaining contact with changes in the oral language. The people spoke Aramaic and Hebrew became a learned language. Christianity was saved from being a Jewish sect by the necessity of appealing to the spoken Greek language. "It is written ..., but I say unto you." The New Testament was written in colloquial Greek.

Christianity capitalized on the advantages of a new technique and the use of a new material. Parchment in the codex replaced papyrus in the roll. The parchment codex was more durable, more compact, and more easily consulted for reference. The four Gospels and the Acts could be placed in four distinct rolls or a single codex. Convenience for reference strengthened the position of the codex in the use of the scriptures or of codes of law. The codex with durability of parchment and ease of consultation emphasized size and authority in the book. Verse and prose which had been read aloud and in company to the third and fourth centuries declined. Reading without moving of the lips introduced a taste and style of its own. The ancient world troubled about sounds, the modern world about thoughts. Egoism replaced an interest in the group. A gospel corpus of powerful coherent pamphlets written in the Greek vernacular had emerged as the basis of the New Testament by 125 A.D. and with the Old Testament constituted a large volume which became a dominant centre of interest in learning.

Pressure from the barbarians to the north led to a search for a more secure capital than Rome, to the selection of Constantinople in 330 A.D., and to the fall of Rome in 410 A.D. The court had cut itself off from the centre of legal development and turned to organized religion as a new basis of support. Christianity based on the book, the Old and



New Testaments, absorbed or drove out other religions such as Mithraism and lent itself to co-operation with the state. In the East the oriental concept of empire developed in Egypt, Babylonia, Assyria, and Persia was restored. In the West law tempered the influence of Christianity and in the East particularly after the Justinian codes the influence of the absolute emperor. To quote Maine again: "It is precisely because the influence of jurisprudence begins to be powerful that the foundation of Constantinople and the subsequent separation of the western empire from the eastern are epochs in philosophical history." "Of the subjects which have whetted the intellectual appetite of the moderns, there is scarcely one, except physics, which has not been filtered through Roman jurisprudence." <sup>[9]</sup> Unequal to Greek metaphysical literature the Latin language took it over with little question. The problem of free will and necessity emerged with Roman law.

The Roman Empire failed to master the divisive effects of the Greek and Latin languages. Inability to absorb Greek culture was evident in movement of the capital to Constantinople and the tenacity of Greek language and culture supported the Byzantine Empire to 1453. Greek disappeared in Rome under pressure from the vernacular as did Latin in Constantinople. The alphabet had proved too flexible and too adaptable to language. Language proved tougher than force and the history of the West was in part an adaptation of force to language. The richness of Greek civilization, the balance between religion, law, and emperor which characterized the Byzantine Empire, enabled it to withstand the effects of new developments in the application of force.

Ridgeway has shown the significance of the crossing of the light Libyan horse with the stocky Asiatic horse in the development of an animal sufficiently strong to carry armed men, and in turn, of the cavalry. Oman has described the defeat of the Emperor Valens at Adrianople in 378 A.D. by heavy Gothic cavalry, the reorganization of the armies of the Byzantine Empire, the defeat of the barbarians following that reorganization, and the movement of the barbarians, successfully resisted in the East, to the conquest of the West. Dependence on roads in the Roman Empire, as in the Persian Empire, facilitated administration and invasion. In the West in the face of barbarian encroachment the hierarchy of the Roman Empire became to an important extent the hierarchy of the church. Monarchy in the Eastern empire was paralleled by monarchy in the Western papacy. In the East the position of the emperor and his control over the state were followed by religious division and heresy. The political monarchy of the East meant ecclesiastical division whereas in the West the position of the papacy was followed by political division.

Ecclesiastical division in the East weakened political power in that heresies reinforced by regionalism saw the loss of Egypt and other parts of the Byzantine Empire to the Mohammedans. With the fanaticism of a new religion based on a book, the Koran, with polygamy, with the opening of new territory to crowded peoples, and with the division of Christendom, Mohammedanism spread to the east and to the west. Defeated at Constantinople in 677 its followers concentrated on the West until they were halted by Charles Martel in 732. Again following Ridgeway, the heavier cross-bred horses of the Franks defeated the lighter cavalry of the Mohammedans. Military pressure from Spain brought the growth of centralization which culminated in Charlemagne and the rise of the German emperors. "Without Islam the Frankish Empire would probably never have existed and Charlemagne, without Mahomet, would be inconceivable" (Pirenne). In 800 the Byzantine Empire was ruled by an empress Irene and the emphasis on the male line in the West strengthened the position of Charlemagne, crowned by the papacy. A new empire in the West was followed by the Carolingian renaissance.

The position of the Emperor in the East led to a clash with monasticism, the iconoclastic controversy, and separation of the Eastern from the Western church. In the West monasticism with little check accentuated the influence of celibacy and of Latin in the church. In the East monasticism was brought under control but in the West it strengthened its position to the point that political history has been powerfully influenced by the struggle between church and state to the present century. The power of monasticism in the West was enhanced by the monopoly of knowledge which followed the cutting-off of supplies of papyrus from Egypt by the Mohammedans. "The Mediterranean had been a Roman lake; it now became, for the most part, a Muslim lake" (Pirenne). In the East the last of the schools of Athens were closed by Justinian in 529 and new centres of learning were established in Constantinople, but in the West an interest in classical studies was discouraged by the monastic tradition of learning which began in Italy. Monasteries concentrated on the scriptures and the writings of the Fathers. The classics were superseded by the scriptures. The blotting out of the learning of Spain by the Mohammedans and restricted interest in learning in Europe meant that the most distant area of Europe, namely Ireland, alone remained enthusiastic for knowledge and from here an interest in learning spread backwards to Scotland and England and to Europe. Alcuin was brought from the north of England to strengthen the

position of learning under Charlemagne. A renewed interest in learning brought an improvement of writing in the appearance of the Carolingian minuscule. Its efficiency was evident in a spread throughout Europe, in ultimate supremacy over the Beneventan script in the south of Italy, and a supply of models for the modern alphabet.

The spread of learning from the British Isles to the continent preceded the invasions of the Scandinavians to the north. Pressure from this direction was evident in the emergence of the Duchy of Normandy in 911 and the reorganization of European defence. By the eleventh century the invasions of the Vikings and the Magyars had left cavalry and the feudal knights in supremacy. The cultural tenacity of language was shown in the conquest of the conquered, the adoption of the French language in Normandy and eventually of the English language in England by the Normans. Military reorganization in Europe, the ascendancy of the papacy, and the break between the Eastern and the Western church in 1054 were followed by the Crusades, the Norman conquest of Apulia and Sicily after 1061, and of England in 1066, and the driving of the Moors out of Spain. The energies of the West were turned against the Mohammedans in the Holy Land and against the schismatic church of the Byzantine Empire. The capture of Constantinople in 1204 was the beginning of the end of the Eastern Roman Empire. Minerva's owl began its flight to the West.

Decline in the use of papyrus particularly after the spread of Mohammedanism necessitated the use of parchment. The codex was suited to the large book whether it was the Roman law or the Hebrew scriptures. In the Byzantine Empire successive codifications of Roman law were undertaken. Caesaropapism and the iconoclastic controversy assumed control over the church by the emperor. In the West the law of the barbarians was personal and the church emphasized the scriptures and the writings of the Fathers. With the Greeks virtue is knowledge, particularly the knowledge that we know nothing, and with the Hebrew prophets, perhaps in protest against the monopoly of knowledge held by the scribes of Egypt and Babylonia, knowledge is evil. The emphasis on the authority of the scriptures and the writings of the Fathers in the West was supplemented by ceremonial, and allegorical writings. The metre of classical poetry was replaced by accent and rhyme. Reading assumed submission to authority.

But long before, the influence of Grecian culture was being filtered through Persian and Arabian civilization in the south to Spain and Europe. The process was hastened by a new medium, namely paper, from China. The invention of the manufacture of paper from textiles in China in the early part of the second century A.D., the adaptation of the brush used in painting to writing, and the manufacture of ink from lamp black marked the beginnings of a written tradition and a learned class. In the Chinese language the pictograph survived though most of the characters were phonetic. With a limited number of words, about 1,500, it was used with extraordinary skill to serve as a medium for a great diversity of spoken languages. But its complexity emphasized the importance of a learned class, the limited influence of public opinion, and the persistence of political and religious institutions. The importance of Confucianism and the classics and worship of the written word led to the invention of devices for accurate reproduction. Neglect of the masses hastened the spread of Buddhism and the development of a system for rapid reduplication, particularly of charms. Buddhism spread from India where the oral tradition of the Brahmins flourished at the expense of the written tradition and proved singularly adaptable to the demands of an illiterate population. Printing emerged from the demands of Buddhism in its appeal to the masses and of Confucianism with its interest in the classics, the literature of the learned. Complexity of the characters necessitated the development of block printing and reproduction of the classics depended on large-scale state support. The first printed book has been dated 868 A.D. Severe limitations on public opinion involved a long series of disturbances in the overthrow of dynasties and in conquest by the Mongols but the tenacity of an oral tradition gave enormous strength to Chinese institutions and to scholars.

Expansion of Mohammedanism and the capture of Turkestan by the Arabs in 751 was followed by the introduction of paper to the West. It was produced in Baghdad as early as 793 and its introduction corresponded with the literary splendour of the reign of Harun al Raschid (786-809). It was used in Egypt by the middle of the ninth century, spread rapidly in the tenth century, declined sharply in the eleventh century, and was produced in Spain in the twelfth century, and in Italy in the thirteenth century. By the end of the fourteenth century paper in Italy had declined to one-sixth the price of parchment. Linen rags were its chief cheap raw material. In the words of Henry Hallam, paper introduced "a revolution ... of high importance, without which the art of writing would have been much less practised, and the invention of printing less serviceable to mankind...." It "permitted the old costly material by which thought was transmitted to be superseded by a universal substance which was to facilitate the diffusion of the works of human intelligence." With a monopoly of papyrus and paper the Mohammedans supported an interest in libraries and in the transmission of Greek classics, particularly Aristotle and science. Prohibition of images in the Mohammedan religion facilitated an emphasis on learning. From libraries in Spain a knowledge of Aristotle spread to Europe and became

important to the works of Albert Magnus and Thomas Aquinas. Arabic numerals, and a knowledge of mathematics and astronomy, of science and medicine found their way through Sicily and Spain to Europe. Writing developed beyond monastic walls and in the twelfth century numerous attacks were made on ecclesiastical corruption. Sombart has emphasized the importance of Arabic numerals to the spread of exact calculations, the growth of business, and the commercial revolution from 1275 to 1325. Cursive handwriting emerged in the thirteenth century. Expansion of commerce favoured the growth of lay schools and closing of the monasteries to secular students increased the importance of cathedral schools and universities. The rural interest of the monasteries was succeeded by the urban interest of the university. Knowledge of architecture imported from Constantinople and adaptation of buildings to northern conditions led to the wave of construction of Gothic cathedrals from 1150 to 1250. With the cathedral came an improvement in various arts such as stained glass and counterpoint music. The University of Paris was started about 1170 and as a master's university its model was followed in later institutions.

The spread of paper from China hastened the growth of commerce in Italy and northern Europe. It supported an increase in writing beyond the bounds of the monasteries. It was a medium for the spread of Greek science through Mohammedan territory and through it Arabic numerals and more efficient calculation were introduced into Europe. Aristotle became accessible through Arabic and Greek and attempts to reconcile his writings with the scriptures were evident in the work of Maimonides and St. Thomas Aquinas. Universities emerged in cathedral centres and supported an interest in the oral tradition, dialectic, and scholasticism. Establishment of the Dominicans and the Franciscans was designed to curb the spread of heresy in the vernacular and in educational centres. The Byzantine Empire disappeared as a balance between papacy and empire and left them to destroy each other. The papacy became more involved in problems of territorial rights. As a result of the Babylonian captivity in Avignon it incurred the antagonism of England. The papacy was no longer able to check the spread of translations of the scriptures in the vernacular, and the spread of Roman law from the Byzantine Empire strengthened the new monarchies in France and England. Concentration on the vernacular produced a new and powerful literature.

Commercial activity in Italy assumed a renewed interest in law. The barbarian invasions had meant an emphasis on personal law and through this Roman law persisted in a modified form. At the beginning of the twelfth century there emerged at Bologna an intensified interest in the study of Roman law and the student type of university. Weakening of the Byzantine Empire was followed by the struggle between church and empire in the West and the latter seized upon Roman law as a powerful instrument with which to reinforce the position of the emperor. Its influence spread in Italy and in southern France and was evident in the development of canon law in the church. "The worst corruption of the middle ages lay in the transformation of the sacerdotal hierarchy into a hierarchy of lawyers" (Rashdall). In the words of Frederic Harrison: "The peculiar, indispensable service of Byzantine literature was the preservation of the language, philology, and archaeology of Greece." But it had perhaps no influence in any field greater than in that of Roman law.

The strength of the church in the north where the traditions of Roman municipalities and Roman law were weak was shown in the University of Paris. In France and particularly in England the weakness of the written tradition favoured the position of custom and the common law. Law was found, not made, and the implications were evident in the jury system, the King's Court, common law, and parliament. In England, law and religion were not fortified by universities since these were not located at the capital or in cathedral cities. Law and religion were responsive to the demands of an oral tradition. The flexibility of the English language as a result of the invasion of successive languages from Europe made for common law, parliamentary institutions, and trade. In Scotland the universities were typically urban and, located in large cities, became the basis for the rich development in philosophy in the eighteenth century. The variety of types of university and geographical isolation provided the background for the diversity of interest which characterized the intellectual activity of Europe. The increasing strength of the vernaculars weakened the position of the University of Paris. The Franciscans in Oxford revived an interest in Plato in contrast with the Dominican interest in Aristotle in Paris. The councils of the church became ineffectual and the monarchy of the papacy became more absolute. The supremacy of celibacy favoured the concentration of power in Rome, prevented the establishment of ecclesiastical dynasties, and facilitated constant appeal to intellectual capacity. Concentration of power in Rome hastened the development of the Gallican church.

In Europe the rise of commerce, of cities, and of universities brought conflict between monasticism and the secular clergy, and between the church and the state particularly in the control over education. Introduction of paper and the spread of writing hastened the growth of the vernacular and the decline of Latin. Control of the church was inadequate to check the oral tradition, and the spread of heresies which followed the growth of trade and the weakening of the

Byzantine Empire. But the church undertook its first counter-reformation. In a letter of 1199 Innocent III frowned on translations of the scriptures, writing that "the secret mysteries of the faith ought not therefore to be explained to all men in all places." Translation and lay reading of the New Testament by the Waldensians, and the rise of romantic poetry in Provence probably under the influence of the Mohammedans and the Byzantine Empire, were ruthlessly stamped out. Establishment of new orders, the Dominicans and the Franciscans, and of the Inquisition was designed to check the spread of heresy incidental to the emergence of translations in the vernacular and of oral discussions in universities. The new courts of Europe were strengthened by the lawyers and writers in the vernacular. Dante wrote that "a man's proper vernacular is nearest unto him as much as it is more closely united to him, for it is singly and alone in his mind before any other." "Since we do not find that anyone before us has treated of the science of the Vulgar Tongue, while, in fact, we see that this tongue is highly necessary for all, inasmuch as not only men, but even women and children strive, in so far as Nature allows them, to acquire it ... we will endeavour by the aid of the Wisdom which breathes from Heaven to be of service to the speech of the common people." <sup>[10]</sup> The power of the vernacular was evident in the growth of nationalism and the rise of universities particularly in Germany. Wycliffe's translation of the Lollard Bible and his influence on Huss in Bohemia pointed to the breaking of the power of the church on the outer fringes of Europe. Opposed to the influence of the University of Paris and its interest in councils the papacy favoured the establishment of universities in Germany and in Spain. The republican cities of Italy, particularly Venice and Florence, prospered with the decline of Byzantine commerce and the Hohenstaufen court. The migration of Greek scholars from the East contributed to an intense interest in classical civilization. Florence became a second Athens in its concern for letters and the arts. Learning had been banked down in the Byzantine Empire and broke out into new flames in the Italian Renaissance. The vitality of the classics of Greece which reflected the power of civilization based on an oral tradition gradually weakened the monopoly of knowledge held by the church. "Nothing moves in the modern world that is not Greek in its origin" (Maine).

As the prejudice against paper as a product of Jews and Arabs had been broken down with the spread of commerce the position of parchment as a medium for the scriptures and the classics was enhanced. The product of the copyist and the miniaturist increased in value. The monopoly of the manuscript and its high value intensified an interest in the development of a technique of reproduction in areas in which the copyist had limited control, namely in Germany. The use of oil in painting and its extension to ink, the development of an alloy which could be melted at low temperatures and remained consistent in size with changes in temperature, the growth of skill in cutting punches, the invention of an adjustable type mould, and the adaptation of the press were brought into a unified system as a basis for printing. Production of a large volume such as the Bible assumed concentration of capital on a substantial scale and a continued output of books. Limited transportation facilities and a limited market for books hastened the migration of printers particularly to Italy, a region with abundant supplies of paper, a commodity which proved more adaptable to the printing press than parchment. Migration to new markets compelled the adoption of new types. The Gothic black-letter type which characterized German printing was replaced by the Roman type in Italy. Resistance of copyists delayed the spread of printing in France, but the delay possibly facilitated artistic development in French type. The demands of the press for manuscripts and the necessity of creating new markets favoured extension to the production of the classics in Greek, the use of more compact type for smaller portable volumes in italic, and the emphasis on the vernacular. The technique of printing crossed the water of the English Channel and Caxton with a concern for the market concentrated on English and avoided the depressed market for books in the classical languages.

An enormous increase in production and variety of books and incessant search for markets hastened the rise of the publisher, an emphasis on commerce at the expense of the printer, and a neglect of craftsmanship. As the supply of manuscripts in parchment which had been built up over centuries had been made available by printing, writers in the vernacular were gradually trained to produce material. But they were scarcely competent to produce large books and were compelled to write controversial pamphlets which could be produced quickly and carried over wide areas, and had a rapid turnover. The publisher was concerned with profits. The flexibility of the European alphabet and the limited number of distinct characters, capable of innumerable combinations, facilitated the development of numerous printing plants and the mobilization of a market for a commodity which could be adapted to a variety of consumers. Knowledge was not only diversified, it was designed by the publisher to widen its own market notably in the use of advertising.

The monopoly position of the Bible and the Latin language in the church was destroyed by the press and in its place there developed a wide-spread market for the Bible in the vernacular and a concern with its literal interpretation. To quote Jefferson, "The printers can never leave us in a state of perfect rest and union of opinion." In the words of Victor Hugo the book destroyed the "ancient Gothic genius, that sun which sets behind the gigantic press of Mayence." Architecture

which for six thousand years had been "the great handwriting of the human race" was no longer supreme. It was significant that printing spread most rapidly in those regions in Europe in which the cathedral was not dominant and in which political division was most conspicuous—in Italy and in Germany. In Italy, with its access to Constantinople, emphasis had been given to the classics; in Germany emphasis was given first to bulky theological volumes and in turn, with the shift of the industry to Leipzig, to the small polemical publications which characterized the writings of Luther and his successors of the Reformation and to the Bible in High German dialect. In the words of Hume, "The growth and surprising progress of this bold sect [Lutherans] may justly in part be ascribed to the late invention of printing and revival of learning." "The books of Luther and his sectaries, full of vehemence, declamation and rude eloquence were propagated more quickly and in greater numbers." "One of the first effects of printing was to make proud men look upon learning as disgraced by being brought within reach of the common people" (Southey).

As in the paper revolution the church was compelled to mobilize its resources in counter-attack, notably in the Council of Trent and the establishment of the Jesuit order. In Italy the power of law and of the church and division among the republics checked the spread of the Reformation and produced Machiavelli. He wrote: "We Italians then owe to the church of Rome and to her priests our having become irreligious and bad; but we owe her a still greater debt, and that will be the cause of our ruin namely, that the church has kept and still keeps our country divided." In France the restricted influence of Greek and the supremacy of Latin favoured an outburst of literary activity in the vernacular in Montaigne and Rabelais. With the suppression of Protestantism Estienne and Calvin fled to Geneva and by the end of the sixteenth century the great scholars of France left for Holland. In Germany political division laid the basis for the bitter religious wars of the seventeenth century. The arguments of William of Occam and of Wycliffe had gained in England with the decline of Italian financiers. Weakness of the church, of monasticism, and of the universities enabled the crown to break with the papacy. The rise of the printing industry had its implication in technological unemployment shown in part in the decline of monasticism.

The success of the Counter-Reformation reflected the influence of force. The growth of industrialism, the interest in science and mathematics, and the rise of cities had their effects in the use of gunpowder and artillery. The application of artillery in destroying the defences of Constantinople in 1453 was spectacular evidence of the decline of cavalry and systems of defence which had characterized feudalism. The instruments of attack became more powerful than those of defence and decentralization began to give way to centralization. The limitations of cavalry had been evident in the mountainous region of Switzerland and the low country of the Netherlands and in the success of movements toward independence in those regions. The military genius of Cromwell and of Gustavus Adolphus in utilization of new instruments of warfare guaranteed the position of Protestantism in England and Germany.

A revolution in finance accompanied change in the character of force. In Italy independent republics had continued the traditions of Rome in the emphasis on municipal institutions. The importance of defence in construction of city walls necessitated development of municipal credit and responsibility of citizens for the debt of a corporate entity. In the struggle of the Netherlands against Spain the principle was extended and the republic became an instrument of credit. In England the ultimate supremacy of parliament in 1688 meant further elaboration, and recognition of the role of public debts was shown in the establishment of the Bank of England in 1694. Extension of the principle of corporate entity from Roman law eventually clashed with the traditions of common law in the revolt of the American colonies in the eighteenth century. The growth of public credit increased the importance of information, of organized news services, and of opinion. Organized exchanges emerged in Antwerp, in Amsterdam, and in London. The importance of opinion in relation to finance accentuated the significance of the vernacular.

The effects of the Counter-Reformation in France were shown in the suppression of printing, the massacre of St. Bartholomew in 1572, and finally in the revocation of the Edict of Nantes in 1685. Suppression of printing in response to ecclesiastical demands was accompanied by an interest in the increased production and export of paper by the state. As a result of this conflict between restriction of consumption and increase of production and exports, cheaper supplies were available in the Netherlands, Geneva, and countries in which printing remained free. From these marginal areas printed material was smuggled back into France. Freedom of the press in marginal free countries was sponsored by repression in France. In the eighteenth century evasion of censorship was shown in the preparation and printing of the Encyclopaedia, and the writings of Voltaire and Rousseau.

Abolition of the monasteries and celibacy in the Church of England, the reform of education in the first half of the sixteenth century, and censorship of the press in the second half of the century had their effects in the flowering of the

drama in the plays of Shakespeare. Weakening of the monarchy under the Stuarts was accompanied by the publication of the King James version of the Bible and the prose of Milton and the sharp decline of the theatre. The impact of the Bible was shown in the separation of church and state as enunciated by the Puritans. It recognized the clash between the written and the oral tradition, the latter persisting in parliament and the common law, and the former in the scriptures. In the Restoration Dryden supported the interest of the court and after the revolution of 1688 and the lapse of the licensing act in 1695 the demands of political parties were met by the writing of Addison, Steele, Swift, and Defoe. Suspension of printing had brought news-letters and discussion in the coffee-houses. Revival of the classics by Dryden and Pope was the prelude to financial independence of Pope, Johnson, and Goldsmith. The restrictive measures of Walpole and the increasing importance of advertising as a source of revenue for newspapers directed the interest of writers to compilations, children's books, and novels and the interest of readers to the circulating library. The position of the church with the supremacy of parliament and constitutional monarchy favoured an interest in deism on the one hand and Methodism on the other.

In the colonies books were imported on a large scale from England and Europe by booksellers and the colonial printer turned his attention to newspapers. In the eighteenth century the energetic writing in London papers before their suppression by Walpole and after the success of Wilkes and others in securing the right to publish parliamentary debates served as an example to colonial journalists. The printing industry crossed the water of the Atlantic Ocean and changed its character. The prominent role of the newspaper in the American Revolution was recognized in the first article of the Bill of Rights. The movement toward restriction of the press by taxes in the latter part of the eighteenth century and the early part of the nineteenth century in England was paralleled by an insistence on freedom of the press in the United States. The results were shown in the rapid expansion in exports of rags from Italy to the United States.

From the invention of printing to the beginning of the nineteenth century the manufacture of paper and the production of the printed word were handicraft processes. The invention of the paper machine and the introduction of the mechanical press involved a revolution in the extension of communication facilities. In England taxes on paper and advertising favoured the monopoly of *The Times* to the middle of the century and removal of these taxes by 1861 was followed by a rapid increase in the number of newspapers and in their circulation and in the demand for raw material. In the United States the demands of large numbers of newspapers hastened the introduction of the fast press, the spread of advertising, inventions such as the telegraph and the cable and the linotype, and a rapid shift from rags to wood as a source of raw material. English authors such as Dickens emphasized the importance of sentimentalism and sensationalism in part through the demands of a new reading class and of an American market. In the words of Barrie, "Dickens introduces children into his stories that he may kill them to slow music." American authors with lack of copyright protection turned to journalism. Artemus Ward stated that "Shakespeare wrote good plays but he wouldn't have succeeded as the Washington correspondent of a New York daily newspaper. He lacked the requisite fancy and imagination." Extension of the newspaper in the United States had its implications for Great Britain in the rise of the new journalism particularly after the South African War. Hearst, Scripps, Northcliffe, and Beaverbrook became dominant figures. In the United States the political ambitions of journalists were checked by competition, in England by nomination to the House of Lords, in Canada by an LL.D. In the twentieth century the power of English journalists was evident in restrictions imposed on the radio through government ownership while limitations on the power of American journalists in the United States was indicated by the effective use of radio by Franklin Delano Roosevelt.

In Anglo-Saxon countries the impact of technological advances on the frontier in the course of which Hearst and Pulitzer from San Francisco and St. Louis introduced revolutionary changes in New York and J. G. Bennett, Jr. and Whitelaw Reid hastened revolutionary changes in Great Britain and Europe, involved an irregular interest on the part of governments in communication and education. Extension of the franchise and the problems of military organization with its demands for technical knowledge and trained men contributed to the improvement of postal facilities and the extension of compulsory education. In Europe the dominance of the book meant less rapid extension of newspapers and restriction in such countries as Germany, Italy, and Russia, and personal and political journalism in France. The varied rate of development of communication facilities has accentuated difficulties of understanding. Improvements in communication, like the Irish bull of the bridge which separated the two countries, make for increased difficulties of understanding. The cable compelled contraction of language and facilitated a rapid widening between the English and American languages. In the vast realm of fiction in the Anglo-Saxon world, the influence of the newspaper and such recent developments as the cinema and the radio has been evident in the best seller and the creation of special classes of readers with little prospect of communication between them. Publishers demand great names and great books

particularly if no copyright is involved. The large-scale mechanization of knowledge is characterized by imperfect competition and the active creation of monopolies in language which prevent understanding and hasten appeals to force.

I have tried to show that, in the words of Mark Pattison, "Writers are apt to flatter themselves that they are not, like the men of action, the slaves of circumstance. They think they can write what and when they choose. But it is not so. Whatever we may think and scheme, as soon as we seek to produce our thoughts or schemes to our fellow-men, we are involved in the same necessities of compromise, the same grooves of motion, the same liabilities to failure or half-measures, as we are in life and action." [11] The effect of the discovery of printing was evident in the savage religious wars of the sixteenth and seventeenth centuries. Application of power to communication industries hastened the consolidation of vernaculars, the rise of nationalism, revolution, and new outbreaks of savagery in the twentieth century. Previous to the invention of printing the importance of Latin and the drain on intellectual energies of a dual language had been evident in the problems of scholastic philosophy. After the invention of printing, interest in the classics in Italy and France and in the Bible in Protestant countries divided the Western world. Hebraism and Hellenism proved difficult to reconcile as did Aristotle and Plato. Roman law and the classics in Italy and the cathedrals in France checked the influence of the Bible and in France emphasized an interest in literature. In Germany the influence of the Bible strengthened the power of the state and favoured the growth of music and letters independent of political life. In England division between the crown, parliament, law, the universities, and trade checked the dominance of single interests, but favoured mediocrity except in finance and trade. In England monasticism delayed education and printing and strengthened the position of the vernacular to the point that violence broke out in destruction of the monasteries in the sixteenth century, civil war in the seventeenth century, and the American Revolution in the eighteenth century.

In the free countries of Europe revival of the classics and the demands of printing on logic had their effects in the powerful impact of mathematics on philosophy in Descartes and on political science in Hobbes. The application of power to the communication industries after 1800 hastened the spread of compulsory education and the rise of the newspaper, and intensified interest in vernaculars, in nationalism, and in romanticism. Mechanized communication divided reason and emotion and emphasized the latter. Printing marked the first stage in the spread of the Industrial Revolution. "The influence of passion over any assembly of men increases in proportion to their numbers more than the influence of reason" (J. Scarlett). It became concerned increasingly with the problem of distribution of goods, and with advertising. Its limitations became evident in the decline of the book to the level of prestige advertising, in the substitution of architecture in the skyscraper, the cathedral of commerce, and in simplified spelling and semantics. Ernst Cassirer, a German refugee scholar, has described the word-coiners as masters of the art of political propaganda. *Nazi-Deutsch*, a glossary of contemporary German usage, included a long list of words which he found it impossible to render adequately into English. Cassirer claimed that he no longer understood the German language as a result of the new words coined to support the Hitler-fascist myth.

Since its flight from Constantinople Minerva's owl has found a resting-place only at brief intervals in the West. It has flown from Italy to France, the Netherlands, Germany and after the French Revolution back to France and England and finally to the United States. These hurried and uncertain flights have left it little energy and have left it open to attack from numerous enemies. In the words of the Parnassus Plays:

Let schollers bee as thriftie as they maye  
They will be poore ere their last dying daye;  
Learning and povertie will ever kisse.

Or, as Johnson put it:

There mark what ill the scholar's life assail  
Toil, envy, want, the patron and the jail.

The Industrial Revolution and mechanized knowledge have all but destroyed the scholar's influence. Force is no longer concerned with his protection and is actively engaged in schemes for his destruction. Enormous improvements in communication have made understanding more difficult. Even science, mathematics, and music as the last refuge of the Western mind have come under the spell of the mechanized vernacular. Commercialism has required the creation of new monopolies in language and new difficulties in understanding. Even the class struggle, the struggle between language groups, has been made a monopoly of language. When the Communist Manifesto proclaimed. "Workers of the world

unite, you have nothing to lose but your chains!" in those words it forged new chains.

I have attempted to show that sudden extensions of communication are reflected in cultural disturbances. The use of clay favoured a dominant role for the temples with an emphasis on priesthood and religion. Libraries were built up in Babylon and Nineveh to strengthen the power of monarchy. Papyrus favoured the development of political organization in Egypt. Papyrus and a simplified form of writing in the alphabet supported the growth of democratic organization, literature, and philosophy in Greece. Following Alexander empires returned with centres at Alexandria and elsewhere and libraries continued as sources of strength to monarchies. Rome extended the political organization of Greece in its emphasis on law and eventually on empire. Establishment of a new capital at Constantinople was followed by imperial organization on the oriental model particularly after official recognition of Christianity. Improvement of scripts and wider dissemination of knowledge enabled the Jews to survive by emphasis on the scriptures and the book. In turn Christianity capitalized on the advantages of parchment and the codex in the Bible. With access to paper the Mohammedans at Baghdad and later in Spain and Sicily provided a medium for the transmission of Greek science to the Western world. Greek science and paper with encouragement of writing in the vernacular provided the wedge between the temporal and the spiritual power and destroyed the Holy Roman Empire. The decline of Constantinople meant a stimulus to Greek literature and philosophy as the decline of Mohammedanism had meant a stimulus to science. Printing brought renewed emphasis on the book and the rise of the Reformation. In turn new methods of communication weakened the worship of the book and opened the way for new ideologies. Monopolies or oligopolies of knowledge have been built up in relation to the demands of force chiefly on the defensive, but improved technology has strengthened the position of force on the offensive and compelled realignments favouring the vernacular. Cultural disturbances are accompanied by periods in which force occupies an important place and are followed by periods of quiescence in which law establishes order. The disturbances of the Macedonian and Roman wars were followed by the growth of Roman law, the end of the barbarian invasions by the revival of Roman law, the end of the religious wars by the development of international law under Grotius, and the end of the present wars of ideology by a search for a new basis of international law.

Perhaps we might end by a plea for consideration of the role of the oral tradition as a basis for a revival of effective vital discussion and in this for an appreciation on the part of universities of the fact that teachers and students are still living and human. In the words of Justice Holmes, "To have doubted one's own first principles is the mark of a civilized man" but the same wise man in *Abrams v. United States* stated "that the best test of truth is the power of thought to get itself accepted in the competition of the market" without appreciating that monopoly and oligopoly appear in this as in other markets.

## APPENDIX A [\[12\]](#)

Mechanisation has emphasised complexity and confusion; it has been responsible for monopolies in the field of knowledge; and it becomes extremely important to any civilisation, if it is not to succumb to the influence of this monopoly of knowledge, to make some critical survey and report. Science, technology and the mechanisation of knowledge are in grave danger of destroying the conditions of freedom of thought, and, in destroying the conditions of freedom of thought, bringing about the collapse of what we like to think of as western civilisation.

My bias is with the oral tradition, particularly as it has been reflected in Greek civilisation, with the necessity of recapturing something of its spirit. For that purpose we should try to understand something of the importance of life or of the living tradition which is peculiar to the oral as against the mechanised tradition, and we should pay greater attention to the contributions of Greek civilisation. Much of this will smack of Marxian interpretation but I have tried to use the Marxian interpretation to interpret Marx; that is to say, there has been no systematic pushing of the Marxian conclusion to



its ultimate limit, and in pushing it to its limit, showing its limitations.

I propose to adhere rather closely to the terms of the subject of this discussion, namely, "a critical review, from the points of view of an historian, a philosopher and a sociologist, of the structural and moral changes produced in modern society by scientific and technological advance". I ask you to try to understand what that means.

In the first place, the phrasing of the subject reflects the limitations of Western Civilisation. An interest in economics implies neglect of the work of professional historians, philosophers and sociologists. Knowledge has been divided in the modern world to the extent that it is apparently hopeless to expect a common point of view. In following the directions of those responsible for the wording of the title of this discussion, I propose to ask why Western civilisation has reached the point that a conference largely composed of University administrators should unconsciously assume division in points of view in the field of learning and why this conference, representing the Universities of the British Commonwealth, should have been so far concerned with political representation as to forget the problem of unity in Western civilisation, or, to put it in a general way, why all of us here together seem to be what is wrong with Western civilisation. Some of you may remember James Thurber's story of the University professor pointing to a student and saying to him: "You are what is wrong with this institution".

In the remainder of this paper I shall be concerned with an interest in the economic history of knowledge in which dependence on the work of Graham Wallas will be evident. He pointed to the danger that knowledge was growing too vast for successful use in social judgment, since life is short and sympathies and intellects are limited. [13] To him the idol of the pulpit and the idol of the laboratory were hindrances to effective social judgment, arising, as they do, from the traditions of organized Christianity and the metaphysical assumptions of professional scientists. [14] He assumed that creative thought was dependent on the oral tradition and that the conditions favourable to it were gradually disappearing with the increasing mechanisation of knowledge. Reading is quicker than listening and concentrated individual thought than verbal exposition and counter exposition of arguments. The printing press and the radio address the world instead of the individual. The oral dialectic is overwhelmingly significant to subjects whose subject matter is human action and feeling and is important in the discovery of new truth, but is of very little value in disseminating it. The oral discussion inherently involves personal contact and a consideration for the feelings of others, and it is in sharp contrast with the cruelty of mechanised communication and the tendencies which we have come to note in the modern world. Quantitative pressure of modern knowledge has been responsible for the decay of oral dialectic and conversation. The passive reading of newspapers and newspaper placards and the small number of significant magazines and books point to the dominance of conversation by the newspaper and to the pervasive influence of discontinuity, which is, of course, the characteristic of the newspaper, as it is of the dictionary. Familiarity of association, which is essential to effective conversation, is present but is not accompanied by the stimulus which comes from contacts of one mind in free association with another mind in following up trains of ideas. As Graham Wallas pointed out, very few men who have been writing in a daily newspaper have produced important original work. We may conclude with the words of Schopenhauer, "To put away one's thoughts in order to take up a book is the sin against the Holy Ghost".

The impact of science on cultural development has been evident in its contribution to technological advance, notably in communication and in the dissemination of knowledge. In turn it has been evident in the types of knowledge disseminated, that is to say, science lives its own life not only in the mechanism which is provided to distribute knowledge but also in the sort of knowledge which will be distributed. As information has been disseminated the demand for the miraculous, which has been one of the great contributions of science, has increased. To supply this demand for the miraculous has been a highly remunerative task, as is evidenced by the publications of publishing firms concerned with scientific works. The average reader has been impressed by an emphasis on the miraculous and the high priests of science, or perhaps it would be fair to say the pseudo-priests of science, have been extremely effective in developing all sorts of fantastic things, with great emphasis, of course, on the atomic bomb. I hoped to get through this paper without mentioning the atomic bomb, but found it impossible.

Geoffrey Scott has stated that the instinct of reverence for science dislodged it from the supernatural world and attached it to the natural world, with the result that the interest in religion has been greatly weakened. Bury described the rapidly growing demand in England for books and lectures, making the results of science accessible and interesting to the lay public, as a remarkable feature of the second half of the nineteenth century. Popular literature explained the wonders of the physical world and at the same time flushed the imaginations of men with the consciousness that they were living in

the era "which, in itself vastly superior to any age of the past, need be burdened by no fear of decline or catastrophe but, trusting in the boundless resources of science, might surely defy fate". [\[15\]](#) "Progress itself suggests that its value as a doctrine is only relative, corresponding to a certain not very advanced stage of civilisation, just as Providence in its day was an idea of relative value corresponding to a stage somewhat less advanced". [\[16\]](#) We may well heed the words of Geoffrey Scott when he said: "It is thus the last sign of an artificial civilisation when nature takes the place of art".

The effects of obsession with science have become serious for the position of science itself. It has been held that the scientific mind can adapt itself more easily to tyranny than the literary mind, since "art is individualism and science seeks the subjection of the individual to absolute laws", [\[17\]](#) but Casaubon was probably right in saying that "the encouragement of science and letters is almost always a personal influence". The concept of the State in the Anglo-Saxon world has been favourable to the suppression or distortion of culture, particularly through its influence on science. Science has been under the influence of the State and it has become more difficult for scientists with the same political background to communicate among themselves, and for those with a different political background it is practically impossible, because of the importance attached to war. Mathematics and music have been regarded as universal languages, particularly with the decline of Latin, but even mathematics is a tool and has become ineffective for purposes of communication in a highly technical civilisation concerned with war.

I can refer only briefly to the significance of mechanised knowledge, as affected by science, to the Universities. Reliance on mechanised knowledge has increased with the demands of large numbers of students in the post-war period. Henry Adams wrote: "Any large body of students stifles the student. No one can instruct more than half a dozen students at once. The whole problem of education is one of its cost in money". [\[18\]](#) We have been compelled in the post-war period, with the larger number of students, to depend on textbooks, visual aids, administration and conferences of University administrations such as we have here. They imply increasing concern with the written mechanised tradition and the examination system, of which Mark Pattison remarked that "the beneficial stimulus which examination can give to study is in inverse ratio to the quality of intellectual exertion required". [\[19\]](#) We can subscribe to his reference to "the examination screw which has been turned several times since, till it has become an instrument of mere torture which has made education impossible and crushed the very desire of learning". [\[20\]](#)

Finally we must keep in mind the limited role of Universities and perhaps recall the comment that "the whole external history of science is a history of the resistance of academies and Universities to the progress of knowledge". Leslie Stephen, referring to the period in the late 18th and early 19th centuries in England, when there was no system of education, said: "There is probably no period in English history at which a greater number of poor men have risen to distinction". "Receptivity of information which is cultivated and rewarded in schools and also in Universities is a totally different thing from the education, sometimes conferred even by adverse circumstances, which trains a man to seize opportunities either of learning or of advancement," to mention only the names of Burns, Paine, Cobbett, William Gifford, John Dalton, Porson, Joseph White, Robert Owen, and Joseph Lancaster. [\[21\]](#) Compulsory education increases the numbers able to read but does not contribute to understanding. Some of you may remember the comment in a discussion on literature by University graduates: "Literature? Sure; we took it in the senior year. It had a green cover". [\[22\]](#) Education is apt to become "merely the art of reading and writing, without training the mind to principles of any kind, and destitute of any regard for virtue or even decency". [\[23\]](#)

We are compelled to recognise the significance of mechanised knowledge as a source of power and its subjection to the demands of force through the instrument of the State. The Universities are in danger of becoming a branch of the military arm. The problem of Universities in the British Commonwealth is to appreciate its implications and to attack in a determined fashion the problems created by a neglect of the position of culture in Western civilisation. Centralisation in education in the interests of political organisation has disastrous implications. This becomes one of the dangers of a conference of British Commonwealth Universities, since, as Sir Hector Hetherington pointed out, the search for truth is much broader than that which can be undertaken by any political organisation. Referring to the dangers of centralisation, Scott wrote over a century ago: "London licks the butter off our bread, by offering a better market for ambition. Were it not for the difference of the religion and laws, poor Scotland could hardly keep a man that is worth having". [\[24\]](#) The problem is perhaps even more acute for the broader English-speaking world, with its common law traditions. The overwhelming influence of the United States as the chief centre of power emphasises the serious limitations of common law in making politics part of law and of emphasising the position of the State, particularly in those nations with written

constitutions. In Roman law countries, notably France, culture has had an opportunity to expand, politics have become less of an obsession and leadership has been given to Western civilisation. Culture survives ideologies and political institutions, or rather it subordinates them to the influence of constant criticism. Constant whining about the importance of our way of life is foreign to its temper.

The Universities should subject their views about their role in civilisation to systematic overhauling and revise the machinery by which they can take a leading part in the problems of Western culture. For example, we should extend our scholarships to Universities on the Continent. Lecturers should be encouraged to write books as a means of compelling them to give new lectures. The Universities must concern themselves with the living rather than with the dead.

[\[Footnote 1\]](#) Albert Guerard, *Literature and Society* (Boston, 1935), p. 288.

[\[Footnote 2\]](#) Cited A. A. Vasiliev, *History of the Byzantine Empire*, II; "University of Wisconsin Studies in the Social Sciences and History."

[\[Footnote 3\]](#) *Ibid.*, p. 400.

[\[Footnote 4\]](#) Jacob Burckhardt, *Force and Freedom* (New York, 1943), pp. 368-9.

[\[Footnote 5\]](#) David Hume, *Essays, Moral, Political and Literary*, ed. T. H. Green and T. H. Grose (London, 1875), I, pp. 195-6.

[\[Footnote 6\]](#) H. S. Maine, *Ancient Law*, pp. 351-2.

[\[Footnote 7\]](#) Thomas Constable, *Archibald Constable and His Literary Correspondents*, (Edinburgh, 1823), I, p. 261.

[\[Footnote 8\]](#) R. T. Flewelling, *The Survival of Western Culture* (New York, 1943), p. 26.

[\[Footnote 9\]](#) Maine, *Ancient Law*, p. 352.

[\[Footnote 10\]](#) Dante in *De vulgari eloquentia*; cited in Vernon Hall, Jr., *Renaissance Literary Criticism* (New York, 1945), p. 17.

[\[Footnote 11\]](#) Mark Pattison. *Isaac Casaubon* (1559-1614) (London, 1875), p. 383.

[\[Footnote 12\]](#) Extracts from a paper presented to the Conference of Commonwealth Universities at Oxford. July 23rd. 1948.

[\[Footnote 13\]](#) Graham Wallas, *Social Judgment*, (London, 1934), p. 29.

[\[Footnote 14\]](#) *Ibid.*, p. 161.

[\[Footnote 15\]](#) J. B. Bury, *The idea of progress, an inquiry into the origin and growth*, (London, 1920), pp. 345-6.

[\[Footnote 16\]](#) *Ibid.*, p. 352.

[\[Footnote 17\]](#) A. L. Guerard, *Literature and Society* (Boston, 1935) 80.

[\[Footnote 18\]](#) *The Education of Henry Adams*, (Boston, 1918) 302.

[\[Footnote 19\]](#) *Essays by the late Mark Pattison*, (Oxford, 1889).

[\[Footnote 20\]](#) Mark Pattison, *Memoirs*, (London, 1882) 305.

[\[Footnote 21\]](#) A. V. Dicey, *Lectures on the Relations between Law and Public Opinion in England during the Nineteenth Century* (London, 1914) 114.

[\[Footnote 22\]](#) H. W. Boynton, *Journalism and Literature* (Boston, 1904).

[\[Footnote 23\]](#) Cyrus Redding, *Fifty Years Recollections* (London, 1848) 11, p. 316.

[\[Footnote 24\]](#) *The Journal of Sir Walter Scott* (Edinburgh, 1890) 11, 256.

[End of *Minerva's Owl* by Harold Innis]