COMMUNICATIONS, TIME AND POWER: AN INNISIAN VIEW

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I A Canadian Perspective

Harold Innis sought to understand "the significance of communications [to] the problem of empire" that is, to governing large areas for a long time (Empire, 7; see Bibliography). Hence his stress on the "two dimensions of political organizations, on the one hand the length of time over which the organization persists, and on the other hand the territorial space brought within its control." (Bias, xvii). In this he was "influenced by a phenomenon strikingly evident" from his study of "Canadian economic history [and] the French, British, and American empires" (Empire, 5; cf Essays, 394ff). The upshot was his theory of the competition for power between politics and religion (II), and then economics (III); after presenting which I will explore some philosophical dimensions of Innis' bias for communications (IV).

Innis' *Fur Trade in Canada* revealed a space-binding imperial economy. From London the Hudson's Bay Co. penetrated the vast interior of North America. The trade's continental domain and cultural complexity (Indian trappers, French voyageurs, Scots managers, British merchants) laid the foundations of Canada itself. Its centralized organization rested on an interior web of water transport, written regulations, standardized accounting, and voluminous communications (Trade, 383-402). Different technologies were involved: transportation, energy, accounting, written rules, and frequent communications.

The north Atlantic cod fishery in contrast was decentralized. Mobile ocean-going ships led to scattered littoral settlements, free trade and democratic institutions from Newfoundland to New England. Centralization and decentralization together embodied the systole and diastole of Canadian federalism, as of empire (*Essays*, 62ff, 358f). In contrast to political economy's narrow concern with production, Innis' work disclosed a dynamic ecology of geography, technology, organization, culture, trade, communication and polity in the origins of this new society. Insight into society's complex dynamics was easier to achieve in the genetic crucible of the new world than in the mature civilizations of the old world, to which I turn.

II Politics, Time and Religion

Innis went on to develop a general theory of empires and communication: "A successful empire required adequate appreciation of problems of space, that were in part military and political, and of problems of time that were in part dynastic... and religious" (*Empire,* 25). Theocracy, the supremacy of religion and its laws over the state, was the goal of religion from Egypt, Israel, early Protestantism, to modern Iran (*Empire*, 32f, 44; di Norcia, 1980). His study began with ancient Egypt (*Empire*, chapter 2). The Egyptian priests enjoyed a "monopoly of knowledge" of astronomy and the calendar, which last persisted up to 1750 (*Bias*, 71). It was essential to predicting the Nile's flooding, the key to Egypt's agriculture, and was reinforced by their control of the complex writing medium of hieroglyphics.

Temporality was a fundamental principle of Egyptian culture's drive to transcend death. Religion's control of time rested on media using durable time-binding materials like stone for writing and in

the pyramids. However the pharaoh was himself the high priest, deemed a god, was mummified and claimed immortality. The pharaohs competed with the priests by commanding the army, regulating the economy, simplifying the state religion, tolerating other religions, and by developing simpler competing media using papyrus. Emperors often claim to be gods (*Empire*, 102f). By establishment the state has controlled religion, from Constantine to Henry VIII and Louis XIII (*Bias*, 47; *Empire*, 112f, 154). Monarchy itself is time-binding; for it rests the legitimacy of the state on the reproductive power of the family (*Bias*, 64-75). Ideologies like paternalism and patriarchy rest moreover on the time-binding synergy of politics and reproduction.

Frequently "the sword and pen worked together" (*Empire*, 10). The state always competed with religion to control knowledge: via its own archives, libraries, and universities, like those established in Alexandria (*Empire*, 91f). Today "education is the basis of the state" (*Bias*, 203). Schools compete with the family and church to reproduce society in the next generation. Thus the state controls the people's understanding of the past and the future. To such power prophecy is an irrelevance. From the late Roman empire the church's temporal power rested on its monopoly of unworldly knowledge, based on complex manuscript writing and durable parchment (*Empire*, chapter 6). In the west this lasted 1000 years, until Gutenberg printed books on paper mechanically, using standardized type (*Empire*, 141-66). Protestant bibles in the vernacular rapidly spread `the word' among the people and overthrew Rome's monopoly; "language proved tougher than force" (*Bias*, 15, 72). Space-binding books replaced time-binding manuscripts. The Protestant strategy also was to subvert the church's monopoly of religious knowledge by proclaiming subjective immediacy in `sola fides'. However its unreliability rendered the secure interpretation of the Bible impossible --a contradiction secularized in Descartes' cogito, whose cognitive immediacy was intended as a solution for the interpretive insecurity of the "books" of man and nature (*Discourse*, chapter 1; di Norcia, 1987b). Ironically, religion's claim to spiritual legitimacy is ultimately temporal, viz, its drive for social supremacy. Religion is not unworldly, it is a finite worldly power. Time-binding solves the core religious problem, transcending death, in worldly fashion: by asserting the primacy of the collective, whether church, state or corporation. Its temporal power rests on the material properties of appropriate communications media. Social supremacy is the hidden truth (*a-letheia*) of unworldly religion and philosophy; it dis-conceals the worldliness (*weltlichkeit*) of religion as a secular power. The `Body Social' reigns, not the `mystical' body.

III Secular Space and Political Economy

The difference between states and religions then is not that between worldly and unworldly powers, but that between competing worldly -space / time based- powers. States seek to make political space prevail over religious time; and "the effective government of large areas depends to a very important extent on the efficiency of communication" and other space-binding technologies: weaponry, transport, communications and the law (*Empire,* 7; *Bias*, 4f). Transportation is the classic space-binder; hence the importance of the Nile to Egypt, roads to Rome, the sea to Britain, and interior waterways to Canada itself. The state's monopoly of force had to be regulated by appropriate media (*Empire*, 10, 21). Brute force evokes opposition; political force in contrast must be carefully and evenly used. It cannot rest merely on a ruler's oral dicta, like those of the Roman pontifex (*Empire*, 86f).

Ruling society demands rules. Writing is `conservative'; it preserves, transmits and standardises social rules over space and time (*Empire*, 133). Writing changes oral decrees (dicta) into a "public document", and makes a legal code possible (*Empire,* 67; *Bias*, 39). That code moderates, regularises and channels political force through space. Laws also give a philosophical caste to a civilization. Mosaic law's prohibition against images evoked a universal ethic (*Empire*, 44). Roman law reflected the secular values of the Stoa and modern notions of property and rights (*libertates*; *Empire*, 89, 98). Indeed the idea of law itself: divine, natural, moral or scientific, lies at the heart of metaphysics; logic and epistemology long assumed a legal model of judgement. Finally, the problems of interpreting legal, biblical and other texts were the source of hermeneutics. The law as a medium unites power and knowledge. Through a written legal code one set of social rules is systematized and standardized over one political space, making it one state --as Hammurabi saw (Bias, 36f 98f). The civil legal code then seems like the medium appropriate to the state. It gives the state a secular monopoly of power / knowledge against the church's competing unworldly monopoly. Legal codes were the main arena of the medieval church / state conflict. In the east Justinian's *Corpus Iuris Civilis* constrained the church's power (*Empire*, 114); but the papacy's code of canon law reigned supreme over weak Western monarchies until the early modern era. Indeed the church's durable parchment manuscript `book', or codex, replaced the papyrus roll in the late Roman era (*Bias*, 14, 64).

III Media and Knowledges

New media evoke new knowledges and new powers. In the 16th century the popular printed book stimulated the vitality of the free cities of Italy and Europe, new states, and early Protestantism. The new books fast took secular form, encouraging the renaissance of secular literary, political and scientific knowledges (*Bias*, 21f, 55). The volatile synergy of exploding worldly knowledges undermined the unworldly word of Protestantism as well as the papacy. The new secular state's victory over the church was heralded in Machiavelli's *Discourses* (11-15). They inaugurated modern political theory by rejecting unworldly religion in the name of a secular politics. 50 years later Jean Bodin proclaimed the social supremacy of the state over the church in his teaching on sovereignty (*Empire*, 149). The secularising trend was solidified by Locke, whose First Treatise on Government attacked the religious rationale for monarchy.

The control of large areas requires appropriate media and evokes a centralized bureaucracy (Empire, 100). It calls for light, easily transportable, space-binding communications media: viz, paper vs. parchment (Empire, 54). From Egypt and China to Rome bureaucracy, political or commercial, rested on paper, for "instantaneous communication strengthens the position of bureaucracy" (File, 6/31; Bias, 47f; Empire, 137f). Current day electronic media multiply the span of control still more. Innis cited Albert Speer on the point: "in the era of modern technique the means of communication alone permit one to mechanise the work of subordinate leadership. As a consequence a new type develops: the uncritical recipient of orders" (Empire, 188). However, Innis warns, the span of an authority's reach can exceed its grasp; central controls break down when overextended. The politics of space is dialectical, not linear. Innis was particularly interested in those "factors responsible for the operation of `centrifugal and centripetal forces'" --a classic theme in Canadian federalism (*Empire,* 7; *Essays*, 358-71). This centre / margin dialectic discloses the significance of communications to the problem of empire. Indeed it opens a clearing for innovation and freedom, which "flourishes in colonies [where] ancient usages can't be preserved", like north America (*Empire*, 66; *File*, 2/1). The centre / margin dialectic extends into competition among

space-binding political forms themselves: empires, states, nations and cities. Empires are large usually undemocratic, and often modernizing vigorous states, like Rome, China, Britain and the U.S.A. Democracies on the other hand are smaller and decentralized; Their power rests on prefer simpler media; for everyone understands the spoken word (*Empire*, 86): "The powerful oral tradition of the Greeks and the flexibility of the alphabet enabled them to resist the (absolutist) tendencies of empire in the East. They drove a wedge between the political empire concept with its emphasis on space and the religious empire concept with its emphasis on time and reduced them to the rational proportions of the city state" (*Empire,* 84).

In sum freedom flows from the spread of media which "emphasize simplicity rather than complexity in writing". Oral media thus reinforce the centre / margin dialectic and abet the rise of "once marginal classes" (*Bias*, 11). `User-friendly' media, oral and written, helped popular institutions flourish in free cities, e.g., the Italian parlamenti, Greek agora, Roman fora, and medieval trade fairs (*Bias*, 40f). In juries and parliaments oral law-making remained a democratic force constraining the king's power (*Empire*, 168). One's own spoken language, the first communications medium. is intrinsically democratic. The use of the vernacular aids democratic, decolonizing nationalism and resistance to foreign empire, as seen in Quebec and Algeria. The politics of maintaining a culture by encouraging time-binding reproductive media like language, e.g, the vernacular, its literature, one's own schools, is central to nationalism and to Canada's bilingual federalism. A multiplicity of vernaculars can however be divisive (*Empire,* 144f; *Bias*, 21f).

Political institutions however do not compete in isolation from other social forces. The victory of the modern state over the church created a vacuum which the new secular economy would fill (*Bias*, 74). But Machiavelli and Bodin had both ignored economics, even though commerce had prevailed over religion in classical Roman property and contract law (*Empire*, 86f). The medieval church's failure to control interest rates, was complemented by the Protestants acceptance of commerce (di Norcia, 1980). Locke's Second Treatise on Government made private property the "chief end" of the modern state, reflecting a new secular battle for social supremacy (#120). The mercantilist state at first controlled the great imperial trading companies, e.g., of East India and the Hudson's Bay. The inauguration of political economy proper still had to wait two centuries for Adam Smith.

Innis developed a distinctive approach to the self-regulating market, in an extraordinary 1938 essay on, "The Penetrative Powers of the Price System" (*Essays*, 252-72). It sought to show how the capitalist economy came to permeate modern society by a dynamic ecology of interacting social forces, each is mentioned in a key paragraph: "Into the moulds of the commercial period, set by successive heavier and cheaper commodities, and determined by geographic factors, such as the St. Lawrence River and the Precambrian formation; by cultural considerations, such as in the English and French languages; by technology, such as the canoe and the raft, by business organization, such as the Northwest [fur trading] company...; and by political institutions peculiar to France and England, were poured the rivers of iron and steel in the form of steamships and railways which hardened into modern capitalism" (*Essays*, 258). This passage depicts the ecology of diverse forces (each italicized) whose interaction created a new capitalist economy in the harsh Canadian environment. They are: geography (space), historical periods (time), culture and language, technologies, commodities, institutions, and political organization. Innis, unlike Marx, did not

believe that capitalism was solely or even primarily a mode of production; for that does not explain what needs explaining: its socially penetrative reach into all corners of society, education, religion, culture and science and its modernization of the feudal world. Instead Innis emphasized distributive (ie, space-binding) economic forces, viz, the spread of the price system and its links to innovations in communications. Prices must be standardized across space if markets are to work. Technologies for transporting goods must be matched by equally efficient media for communicating (ie, storing as well as transmitting) commercial information about both goods and their values. The more reliably media store such information and the faster they move it the more efficient the market.

Money, an essentially symbolic and informative medium of exchange was the first medium to aid the spread of the price system. Coins "operated at a high level of efficiency in occupying the vacant spaces of the earth" (*Essays*, 260). Indeed "money permeated social relations [and] encouraged political and economic freedom", showing the market's `penetrative powers' (*Empire*, 70). Secondly, the Phoenicians developed a phonetic alphabet to assist "maritime trade. Commerce and the alphabet were inextricably interwoven" (*Empire*, 43). Thirdly, the 13th century commercial revolution rested on the spread of cheap paper from Syria to Italy and the subsequent invention of letter of contract (*Empire*, 128f). Fourth, the subsequent global spread of commerce depended on Renaissance navigation, transportation and communications technologies: the telescope, the ship and the book. Most of these innovations preceded classical mechanics by a century and mechanized industrial production by 300 years. In sum a combined communications / economic revolution helped break up the church's monopoly of knowledge. Finally, today's multinational corporation "depends on reliable air travel, on efficient telephones, telegraphy and telex systems and computers capable of handling a mass of information" (Tugendhat, 31).

In fine, modern capitalism emerged from within a complex social ecology and its social diffusion / penetration resulted from new communications media. Industrialism in contrast was birthed by mechanized production technologies, which emerged from within this centuries old pre-existing social matrix of international commerce and communications. However Innis did not see communications media as any `ultimate causal factor' in history, as Marx said of the economy, or mode of production. `Materialism' is too broad a concept for so narrow a doctrine; I prefer to term it economism. Indeed production technologies cannot of themselves explain the global spread of capitalism. Nor finally do they explain how the economy (which is more than a mode of production) gained social supremacy. Marx asserts that primacy; he does not explain it (di Norcia, 1974). But force and wealth are not the sole source of power. By interlinking communications media and other social forces Innis' theory precluded the reduction of historical development to any single causal factor, whether technology or the economy. Indeed Innis reinterpreted Marxism in terms of the clash between oral and written communications media. (*File*, 5/126, 11/111). The competition for social supremacy between politics, religion and now commerce assumes that different forces / groups, not merely an economic `class', dominate in different times, by manipulating the specific social matrix of their world. In contrast to economism, the Innisian social ecology respects the interaction of diverse forces. It is the matrix within in which communications media are embedded. Accordingly I will now examine whether communication deserves any prominence in that ecology, and its philosophical implications.

IV Communications and Power/Knowledge

Innis' ecology of communications, space/time, and power is replete with philosophical implications about power / knowledge, ontology, and the `bias of civilization'. I will take them in turn. By 1946 Innis had decided that political economy "will be compelled to broaden its range and to discuss the implications of competition between languages, religions and cultural phenomena largely neglected by it" (1946, 262). He had already abandoned the economistic binders of political economy--capitalist and Marxist. He went on to articulate a general social theory which complemented political economy's focus on conflict with productive interests (or `classes'), with the competition for power among all of society's economic (productive and distributive) and reproductive institutions (of kinship, religion, education, culture and language). Now no human society can live without both producing basic material goods and reproducing itself. An empire then is not just a large state; it also lasts for a long time. It reproduces its civilization. The ecological approach dynamically links all social forces, productive and reproductive. It discloses the full sweep of the struggle for social supremacy; and thereby of social theory.

Communication is essential to both universal drives: to economics: the drive to produce and distribute goods across social space; and to culture: the drive to reproduce society through time. Innis' social ecology discloses a pervasive `bias' of communications: "The relative emphasis [of communications media] on time or space will imply a bias of significance" for society and thought. This bias is not subjective but objective; for it is rooted in the material space and time-binding properties of communications media. "Heavy and durable [media] not suited to transportation" are better suited to disseminating knowledge "over time than over space" (*Bias*, 33). In contrast space-binding media are light and easily transportable, and often less durable too. Electronic media signals for example are impermanent and do not bind for time (*Bias*, 82).

Power is not so much an immediate relation among individuals; rather it is social and mediated, e.g., by appropriate technologies, including communications media. The differing space/time biases of various media make them appropriate to different forms of power: some to empire and bureaucracy, others to hinterland resistance and democracy. Imposing laws, moving goods, obtaining information, extending military control, developing knowledge, and maintaining a culture, all depend on the efficiency and durability of communications media (*Empire*, chapter 1). Religion's "monopoly over time" for example "stimulated competitive elements in the organization of space" viz by politics and commerce (*Bias*, 124; *Empire*, chapter 2). And oral media encourage democracy and social vitality: "The significance of the oral tradition [is] shown in the position of the assembly the rise of democracy, the drama, the dialogues of Plato and the speeches of Thucydides." (*Bias*, 9).

Innovations in communications technology and the resultant rapid spread of information are in addition powerfully destabilizing and liberating social forces. The rise of a simple writing style based on the alphabet within a vital oral tradition helped bring on a democratic revolution in ancient Greece; and Gutenberg's "mechanization of communications" contributed to the extraordinary social revolutions of 16th century Europe, the formative modern period. Transcending the last bias is a form of freedom appropriate to modern social theory, as the conclusion will indicate. Indeed the vernacular itself is part of the arsenal of nationalism, one of the few modern movements that unites democracy with time-binding media (cf also ecology and feminism). Its significance to modern politics and social theory has been underrated because of the

economistic blinders of conventional social theory and the space-binding bias of the age (di Norcia, 1984).

The bias of communications, Innis suggests, contains the possibility of freedom; and freedom is neither a matter of subjective immediacy nor a metaphysical escape from causality. Rather it takes material / practical social form: "An unpredictable freedom arises in the clash between monopolies" (*Empire*, 131); for the human "spirit breaks through at new levels of society and on the outer fringe" usually by deploying simpler media, like the alphabet and the vernacular (*Empire*, 117f). Here the Innisian dialectic recurs: "Monopolies of knowledge developed and declined partly in relation to the medium of communications which they were built and tended to alternate as they emphasized religion, decentralisation and time, and force, centralisation and space" (*Empire*, 166). Such "monopolies fall of their own weight" because they "invite competition" and "realignments" of power (*Empire*, 41, 54, 128; *File*, 27/130).

Innis' economic metaphor of a monopoly of knowledge links knowledge with power. States, churches and corporations, and societies themselves deploys competing media and knowledge monopolies in their struggle for social supremacy (see II, III). The pharoah for example "had no way of knowing whether his scribe was representing his thoughts authentically. He gave the orders and hoped they were transmitted accurately... The real power lay in the hands of the scribes, the select few with the knowledge of writing" (McCorduck and Feigenbaum, 46). Many executives have to rely on a programmer's monopoly of computer knowledge; but rapidly spreading PC-based communications networks already represent a decentralizing counterforce to bureaucratic corporate management (Drucker, 1988). So power rests on knowledge, e.g., judgements about a technology's appropriateness to one's ends (Schumacher, II.5). Some knowledge is of value to someone, somewhere, sometime. Knowledge then is a value-laden social force, not the metaphysically immediate object of an inward mental gaze. Innis interpreted Cartesian immediacy as a spatialized "detachment of the self" from the world (*Bias*, 65; see di Norcia, 1987b). Descartes' four rules of method in the search for truth articulated the atomistic analytic technique appropriate to modern media and culture (*Empire*, 152; 23/47; *Bias*, 132-41). Innis rejected any such atemporal mathematical `Idea' of knowledge, whether Platonist, Cartesian or positivist (*File*, 11/46). But even Descartes classified knowledges (literary, scientific, religious and philosophical) in terms of the `books' of nature, the world, and, especially, the self (*Discourse* I, II; di Norcia, 1987b). The norm guiding his solitary search for truth in each `book' was completely risk-free interpretive security (*assurance*). Only the last book's apparent immediacy qualified it as a secure source of knowledge. This prison of solipsistic immediacy may have been an unworldly haven for religious or romantic individualism, but it is the hell of power/knowledge (Foucault, 51f, 69f).

But for Innis knowledge is always mediated; it is what communications media store and transmit. To be stored or transmitted knowledge must be `codified': that is, in some material medium whether neural, psychological, social and/or technological. Systematic storage facilitates both its interpretation and communication. How knowledge is stored has a bearing on social power; for a knowledge's accessibility and security of interpretation (Descartes' problem) depend on the difficulty / ease of use of the medium in which it is stored (*Empire*, 24f, *File*, 5/107). Innis' interest in legal codes, language, and media show some affinity with hermeneutics, albeit seen as a realm of power/knowledge. Knowledge's links to power correlate with the interpretive ease difficulty / ease of the code used to store it. User-unfriendly codes encourage monopoly; friendly codes, diffusion

and spread of knowledge. Competition among / against various interests' monopolies of knowledge underlay Innis' theory of the rise and fall of civilizations. His understanding of power/knowledge in terms of communications media and social ecology reflect recent philosophy's rejection of the unworldly metaphysics of the Platonic search for the One and immortality, and the intellectual immaturity of Descartes' Quixotic quest for certainty. Hegel, Marx Peirce and Heidegger in contrast formulated a `worldly ontology' of history, practice, power, and finitude. Here Innisian theory finds a home (*Empire*, 51). Modern philosophy rather is content with a worldly ontology of human limitations, finitude and complexity.

That worldly turn underlay Innis opposition to the romantic fatalism of Spengler. Ellul's totalizing metaphysical `Ideas' of `Technology' and Technique' oversimplify and reify the complex social ecology of communications and power. Innis' approach was neither fatalist nor optimist about technology and modernity, but was empirical, skeptical and ambivalent. He described how different technologies: of force, energy, transport, production, and communications, mediate social power/knowledge relations. That complex empirical insight was discernible in his early work on Canada and his pivotal critique of the price system. Neither economics nor technology, his ecology implies, is total in its impact. Rather each has limited effects, relative to that of the other forces in its social matrix. No one force explains all socio-historical phenomena.

Empires, states, religions, economies, cultures, etc, compete unendingly for social supremacy, but at the same time they clear openings for freer forms of power/knowledge. This parade of powers and freedoms represents the rise and fall of civilizations. History is therefore neither linear nor cyclical, "but rather a web of which the warp and the woof are space and time woven in very uneven fashion and producing distorting patterns" (*Bias*, xvii). This worldly ontology underlay Innis' ambivalent appraisal of his own civilization. He concluded his last work on communications media with a critique of the "technological drift of modern civilization... The conditions of freedom of thought are in danger of being destroyed by science, technology and the mechanization of knowledge, and with them western civilization" (*Bias*, 190). For the modern "reliance on mechanized knowledge" is double-edged: it increases the flow of information and spawns social instability without enhancing wisdom or understanding (*Bias*, 190-95; 200-14).

In phrases which resonate the implicit ethic of Heidegger's *Being and Time* Innis criticized modernity's neglect of temporality and culture. It was a threat to the survival of civilization. His own essays, he felt, were "perhaps in themselves a product of the instability which they attempt to describe as characteristic of af a period in which time has been torn into fragments" (Bias, xviii); for the modern world's "obsession with present-mindedness precludes speculation in terms of duration and time" (*Bias*, 87). Modernity's spatializing bias against time rendered any understanding or appraisal of modern civilization difficult; for such an appraisal required what modernity subverts: a sense of time (*Bias*, 132). Nonetheless Innis' work repeatedly demonstrated its transcendence of the atemporal bias of modernity. However haltingly and inadequately, it articulated the civilizational problem of space/time, its roots in communications media and the complex underlying dynamic of power/knowledge. Transcending one's situation is and can not be total; rather it rests on the limited but real projection from one's own space/time world into another time, space and culture. This practice is both possible and not uncommon (especially in culturally complex societies, like Canada).

Innis' theory suggests that any appraisal of modernity must begin by understanding society's dynamic ecology of communications, time and power. To judge without understanding is to moralise. Rather one must articulate an ethic appropriate to one's civilization. Innis envisaged social vitality in two ways: in terms of a great civilization's balance between expansion and longevity, power and culture e.g., Byzantium (*Bias*, 64, 75f); or of the vibrant oral culture, decentralised democracy, international trading economy of free city-states, e.g., in ancient Greece and Renaissance Europe. "Nothing is more favourable to the rise of learning than a number of neighbouring and independent states connected by commerce and policy" (*Political Economy*, 138; *Empire*, 66, 80-84). Here we find Innis' social ethic. At bottom however "the problem of empire and the western world" remains. It is to create the conditions in which "the bias of communication can be checked and an appraisal of the significance of space and time can be reached" (Empire, 170).

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