Radio, modern communication media and the technological sublime

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Abstract

Leo Marx and others have argued that the reception of technology in the United States during the nineteenth century was conditioned by the 'technological sublime'. John F. Kasson defined this as a 'powerful emotion, utility, and moral purpose', suffused with the conviction that the health of the republic was indicated and improved by technological progress. This article provides different perspectives on the American technological sublime, as well as an exploration of its transference to radio and then television. Although there was no shortage of enthusiasm for radio, and for its potential to reconfigure the republic, its reception was not as uncomplicated as the idea of the technological sublime suggests. Interwar hopes for broadcasting and its potential social effects spoke as much to American insecurities as to their dreams; deep fears about social cohesion, cosmopolitanism and pluralism underpinned promises of a new age of radio culture and citizenship. Most Americans did not need to be persuaded of the benefits of radio and later media technologies, but those who identified with the cultural and political establishments needed to be reassured that their position and values would not be threatened by it.

Keywords

radio history
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More than forty years ago, Leo Marx argued that an impulse to primitivism had conditioned reception of technology in the United States. Americans, Marx argued in *The Machine in the Garden*, sought to reconcile technology and the pastoral ideal by striving for the 'middle landscape' in which the machine did not desecrate the garden. This unlikely reconciliation was, Marx thought, distinctively American and initially propelled by the high priests of the American literary renaissance. American conceptions of the environment firstly as a pristine wilderness and then as an orderly garden were affronted and then adapted to accept the place of technology within them. Marx was an avowed American exceptionalist, arguing that the formation of a middle landscape was a peculiarly American literary, cultural and then national achievement (Marx 1964: 195).

Marx's conception of a middle landscape gave birth to an American 'technological sublime', which transferred the earlier sense of awe and

wonder directed at the natural environment to the technological wonders – and intrusions – of the industrial revolution. As had its predecessor, the technological sublime helped reconcile the conflict between pre-industrial ideals and values and the machine age by connecting the natural environment, technology and civic values in a dialectical synthesis. Marx quoted Charles Caldwell, a contributor to the *New England Magazine* in 1832, to show this connection at work:

> Objects of exalted power and grandeur elevate the mind that seriously dwells on them, and impart to it greater compass and strength. Alpine scenery and an embattled ocean deepen contemplation, and give their own sublimity to the conception of beholders. The same will be true of our system of Rail-roads. Its vastness and magnificence will prove communicable, and add to the standard of the intellect of the country.
>
> (Quoted in Marx 1964: 195)

The Machine in the Garden has since become one of the most influential works in twentieth century United States historiography (Meikle 2003: 147–160). Despite the limitations of its dualism of the 'machine' and the 'garden' and its dialectic resolution in the form of a 'middle landscape', *The Machine in the Garden* remains, in Jeffrey Meikle's estimation, 'the undisputed starting point for all attempts to understand the complex connections among developing technologies, their representations in text and image, and the multiple realities of American cultural experience' (Meikle 2003: 160).

John Kasson, in *Civilizing the Machine* (1976), extended the application of the technological sublime beyond cultural texts and into republican values. Kasson emphasized popular acceptance over intellectuals' dilemmas within his version of the technological sublime, which was a combination of powerful emotion, moral purpose, and the conviction that the health of the republic was both indicated and improved by technological progress (Kasson 1976: 166). By yoking technology to republicanism, the technological sublime eased popular fears of industrialism and quietened those who criticised its impact on American environments and values. Nineteenth-century Americans came to see no insoluble conflict between the machine and their republican ideals of nature and an orderly society. This belief in the possibility of reconciling industrialization with pastorally-based republicanism, Kasson concluded, was both 'maddeningly perverse' and doomed to fail (Kasson 1976: 174).

Leo Marx's sublime focused upon the iconic nineteenth-century technology of the locomotive; it is the story of the train's whistling intrusion into Hawthorne's reverie at Sleepy Hollow, in 1844, that provides *The Machine in the Garden* with its *leitmotif*. Kasson focused upon other artefacts of industrialism such as factories and industrial machinery to sustain his argument, while Richard Rodgers has applied it to other 'technological landscapes', such as suburban lawns and Bikini Atoll, advertizing and tourist resorts (Rodgers 1999). David E. Nye's *American Technological*

Sublime, itself dedicated to Leo Marx as 'sublime teacher', reads bridges, skyscrapers, 'the Great White Way', the Apollo program and the Statue of Liberty as yet more texts for the American sublime:

> The sublime taps into fundamental hopes and fears. It is not a social residue, created by economic and political forces, though both can inflect its meaning. Rather, it is an essentially religious feeling, aroused by the confrontation with impressive objects.
>
> (Nye 1994: xiii)

More recently, other historians, such as David Bodanis, Caroline Marvin, Jeffrey Sconce and Lynne Simon, have examined electricity and communication media in implicit terms of the technological sublime.[1] Each of their iterations, however, shares a common, if differently expressed, conviction of a distinctively American tendency to imbue technological advance with ideological and civic value.

My research on the representations and reception of radio broadcasting in the United States between the wars provides different perspectives on the American technological sublime, as well as a case study of its transference to other twentieth-century mass communication media. Although there was enormous enthusiasm for radio, and for its potential to reconfigure the republic, its reception was much more complicated than Leo Marx's dualisms, dialectic and idea of the technological sublime implied. Interwar hopes for broadcasting and its potential social effects spoke as much to American insecurities as to American dreams; deep fears about social cohesion, cosmopolitanism and pluralism underpinned promises of a new age of radio culture and citizenship. Within the context of a mature consumer economy, ordinary Americans did not need to be persuaded of the benefits of radio, but those who identified with the cultural and political establishments needed to be reassured that their position and values would not be threatened by it. The question to be explored in this article is therefore whether or not the idea of the technological sublime as elucidated by Leo Marx and his disciples can be easily and straightforwardly applied to modern mass media such as radio and its successors.

In examining the response to radio in the first decades of the twentieth century, it is instructive to review earlier examples of instantaneous communication media. The telegraph's reception most closely reflected the rhetoric of the technological sublime, because of its close association with the iconic railroad, and also because of its invention at the high point of enthusiasm for republican technology and for the conquest of the frontier (Thompson 1947). The telegraph also quickly attracted positive associations with republicanism, democracy, and the geopolitical destiny of the United States. Even Samuel Morse's legendary first message – 'What hath God wrought?' – encapsulated a sense of divinely ordained technological destiny for his invention. The telegraph's first real use, the transmission of results of the 1844 Whig convention in Baltimore to Washington, suggested

1 See David Bodanis (2005), *Electric Universe: How Electricity Switched on the Modern World*, London: Little, Brown; Caroline Marvin (1988), *When Old Technologies Were New*, New York: Oxford University Press; Elizabeth R. McKinsey (1985), *Niagara Falls: An Icon of the American Sublime* Cambridge University Press; Jeffrey Sconce (2000), *Haunted Media: Electronic Presence From Telegraphy to Television*, Durham, NC: Duke University Press; and Linda Simon (2004), *Dark Light: Electricity and Anxiety from the Telegraph to the X-Ray*, San Diego: Harcourt Brace Jovanovich.

the new medium's potential for rapid dissemination of nationally important information and of physical and civic nation building (Starr 2004: 161).

The telegraph provided new hope for the republic because citizens who are sovereign must also be informed. This is how William F. Channing expressed his hopes for the telegraph in 1855:

> The electric telegraph is the nervous system of this nation and of modern society, by no figure of speech, by no distant analogy. Its wires spread like nerves over the surface of the land, interlinking distant parts, and making possible a perpetually higher cooperation among men, and higher social forms than have hitherto existed.
>
> (Quoted in Thompson 1947: 253)

The telephone was a different matter. The contrast between Alexander Graham Bell's alleged first words on the telephone – 'Mr Watson, come here, I need you' – with Morse's grandiloquence was palpable. Between the invention of the telegraph in 1844 and that of the telephone in 1876 lay the American Civil War and its harder, more utilitarian view of history, society and technology. From the outset, the telephone had a more indoor, and later domestic, orientation, which contrasted with the telegraph's association with the railroads and the bridging of the huge expanses that separated Americans. The telephone, on the contrary, was not overtly identified with republicanism, patriotism or education. One consequence of this may have been the relatively slow uptake of the telephone between 1876 and 1920. Even in 1920, nearly fifty years after its invention, only 35 per cent of American households had a telephone (United States Bureau of the Census 1976: II: 796).

More prosaically, high subscription costs also made diffusion of the telephone slow and selective during the nineteenth and early twentieth centuries. Claude Fischer estimated that the cost of an average telephone subscription represented about 13 per cent of a manufacturing worker's earnings in 1895, and American working class families were much more likely to own a car than to have a telephone in the 1920s and 1930s (Fischer 1992: 109). This slow rate of diffusion, especially before 1920, was also a product of the telephone industry's marketing strategies, which emphasized business customers over urban households (Fischer 1992: 67).

Fischer concluded that the telephone's history is significant but unspectacular. He implicitly deprecated the technological sublime, at least as applied to the telephone:

> Our theme would be more dramatic if we could implicate the telephone in the emergence of some aspect of psychological modernity – rationality, angst, anxiety, dehumanization, whatever. The available facts, which indicate that Americans absorbed the telephone into mundane life, seem deflating. But there is something yet more profound in seeing people as active participants, assimilating a major material transformation into their lives.

Douglas B. Craig

Those lives were not left unaltered, to be sure, but the alterations were largely the conscious product of people employing things, not of things controlling people.

<div align="right">(Fischer 1992: 254)</div>

There was much more enthusiasm and ideological weight attached to radio when it began to impinge on popular consciousness after 1910. As an exciting extension of the idea of the telegraph – instantaneous communication, but without the need for wires, poles or cables – radio soon became known as a lifesaver, particularly in connection with the sinking of the Titanic in 1912, and as a popular hobby among a growing band of technically literate men and boys. Radio's full potential as a communicator was not realized until it shed the transmission of code and became a carrier of the human voice. That breakthrough, when combined with the advent of broadcast programming in 1921, began the radio boom.

There followed a flood of promises and forecasts of the wonders that radio would bring to American and global society. Radio would bring education to the masses, as millions could now tune in to programs devoted to scientific and cultural education. Radio would be the most effective antidote to illiteracy yet devised. The new medium might even provide the necessary impetus towards world peace after the war to end all wars (Lyons 1966: 122).

By bringing political speeches, congressional deliberations and election campaigns into people's homes, radio would also provide a national civics lesson that could cover the whole country and reach all its citizens. Now people in small towns could hear symphony orchestras from the great cities, and the work of the nation's best poets and writers (Gates 1941:11; Czitrom 1982: 85). The idea that radio might primarily be an entertainment medium was often expressed *sotto voce* by broadcasters in the 1920s, but more assertively in the 1930s. Even radio's entertainment, however, was described in ways that elevated it above mere amusement. Its ubiquity meant that the new radio nation might at last include those who previously felt detached from it. Life would be more interesting and varied for women at home, and farm life less isolating for young people who would otherwise yearn for city life (Frederick 1922: 28; Ware 2005: 49). Immigrants, and the process of Americanization, would also benefit from the Radio Age through radio's assumed power as a cultural assimilator (Cohen 1990: 129–143).

Was this flood of enthusiasm for the future of radio expressed as a technological sublime? The answer is mixed. On the positive side, radio clearly confirms John Kasson's thesis that iconic technology was yoked to republicanism and patriotism, and in so doing it allows the extension of Kasson's arguments from industrial artefacts to mass communication media. Radio was widely seen as a way to help achieve the sort of education, enlightenment and engagement that republicanism and popular sovereignty required. When the otherwise unassuming Warren Harding spoke in

1921 on a radio network stretching from New York to San Francisco, the *New York Times* declared that 'his voice has grown to the size of the Republic', and compared him to Pericles (*New York Times*, November 21 1921: 17).

Rather than describe these lofty hopes as a radio sublime, however, it is more accurate to describe them as manifestations of radio exceptionalism. By this I mean a conception of radio during the 1920s and 1930s as a unique informative and educational force. As an effortless conqueror of physical distance and as the carrier of the human voice and aural culture, radio exceptionalism saw radio as a medium of special and singular destiny that was more powerful than the printed word, more ubiquitous than any other communication medium and better suited to diffusing civic and cultural knowledge than any of its contemporary competitors. The distinction between a radio sublime and radio exceptionalism is best seen when examined in the context of the case against a radio sublime.

The nineteenth-century technological sublime supposedly performed an important acculturative function. The changes wrought by industrialization and its fruits could be disguised and ameliorated by ornamentation of machines and by constant recourse to patriotic rhetoric (Kasson 1976: 137). Whatever may have been the case in the middle of the nineteenth century, it is clear that, by 1920, Americans were no longer in need of such acculturation. The consumer economy had arrived, and would become entrenched in the 1920s. There was now much less need to address fears of technology, at least in this manifestation. Radio was seen as a miracle of the age, and its adoption rate in the 1920s and 1930s was astonishing. In 1921, there were 30 radio stations in the United States; 12 months later, there were 556. In 1921, only 0.2 per cent of American households contained a radio; in 1930, 46 per cent did. In 1940, twenty years after the first broadcast, radio had entered more than 80 per cent of American homes (Craig 2000: 15). Radio diffused far more quickly than the telephone, and subsequently only TV has penetrated American households at a faster rate (United States Bureau of the Census 1976: II: 796).

Some elements of the ornamentation of early radio did remain, recalling nineteenth century attempts to soften the impact of new technology. The presentation of radio sets in the guise of living room furniture aimed to position radio more firmly within the domestic realm and to appeal to female purchasers. This process was vital to the radio industry's marketing strategy, as it sought to move radio from men's sheds to families' living rooms. As opposed to the ornamentation of nineteenth-century industrial machinery, which Kasson argued was directed at calming fears of mechanisation and its affront to republican conceptions of independent yeomen/workers, the ornamentation of radios seems more connected to marketing strategies directed at a population already convinced of the desirability of the product (Schiffer 1991: 87–99; Kasson 1976: 139–180).

Marx, Kasson and Nye, in their different ways, argued that the technological sublime was an essentially optimistic phenomenon that expressed a

Douglas B. Craig

deep faith in the future of the republic through technological advance. This optimism, especially in Marx's analysis, was not unalloyed; behind the sublime lay a deeply conflicted response to industrialization in the high culture which he examined. Behind radio exceptionalism, as well, lay a sense of anxiety – but that anxiety focused not so much on radio's potential affront to republicanism as on its perceived usefulness to the modern republic. Radio was certainly not seen as a challenge to republicanism itself, but rather as a cure for some of its problems. The hopes of radio exceptionalism, therefore, reveal much about the anxieties for the health of the early twentieth-century republic.

These anxieties, as revealed by the reactions of American social analysts to the potential of radio broadcasting after 1920, focused on several phenomena and groups. Most generally, some worried about the plight of the average citizen in the modern age. Walter Lippmann, John Dewey and others believed that effective citizenship was now beyond the educational and experiential limits of most Americans. Social, political and economic life had become too complex and too volatile for the average person to understand, and this fuelled concerns about the political health of the nation as a whole. Non-voting was the most obvious symptom of this malaise: 79 per cent of eligible voters went to the polls in the presidential election of 1896, but in 1920 only 49 per cent bothered to vote (McGerr 1986: 185–187; Lippmann 1947: 29). These concerns had great purchase within a republican context of popular sovereignty, but radio offered new hope because of its widely trumpeted educative and informative functions (Craig 2000: 205–211). By bringing political news and information in readily accessible form into people's homes, radio might address this problem.

Radio also promised hope to those concerned about the urban-rural divide in the 1920s. That decade was marked by deep concerns that American society was dividing along economic, social and cultural lines between the growing urban areas and the declining countryside. Radio quickly became embroiled in this conflict, both as a symptom and as a cure. Provincial broadcasters and legislators worried about its centralizing cultural tendencies, and during the 1920s they fought hard to ensure that the new networks were not allowed to control the entire broadcasting industry.

Alongside and connected to these concerns ran a contest during the interwar years over what can be called cosmopolitanism. This encompassed a range of sociocultural phenomena best remembered for their manifestations: Flappers, a nascent sexual revolution, and (piecemeal) changing views on gender roles. Existing cultural forms and boundaries also came under challenge; the emergence of jazz, of literature actively hostile to the genteel tradition and the growing influence of movies all indicated a blurring of cultural hierarchies that worried those who felt secure within earlier cultural assumptions and values. In addition, the advent of broadcast radio coincided with disruptions to the post-Civil War racial settlement, which had submerged black aspirations in favour of a

white consensus that hoped to confine African-Americans to the South. This had largely allowed northern whites to ignore the black presence in their polity and culture. Northward migration of blacks after 1910, and the emergence of the Harlem Renaissance and jazz, meant that black concerns and expression impinged much more deeply, and in very unsettling ways, upon many northern whites after World War I.

Network programmers revealed a deep reluctance well into the 1930s to broadcast or in any way to encourage jazz, which had strong overtones of African-Americanism and increasing associations with a new and youthful urban culture. Eventually, the commercial imperative to maximize audiences forced the networks into rethinking their anti-jazz policy, but their conversion was unenthusiastic (Barlow 1999: 22). They clung to a vision of radio as a purveyor of middle-brow culture which aimed at the mythical mid-point of white taste.

Reluctance to broadcast jazz was part of a wider refusal to acknowledge the role of African Americans or to recognize their economic and social plight. In 1933, Malcolm Willey and Stuart Rice predicted that radio would create a new age of 'social levelling' in the United States. Of all the media, they thought, radio was the 'most free from racial or class discriminations. The negro who cannot enter the white man's church or theatre can hear on his radio the white man's sermons, lectures and entertainment with complete equality' (Willey and Rice 1933: 204). Willey and Rice's conception of racial levelling by radio, which confined African Americans to being listeners to, but not influencers of, white culture illustrates the limited nature of radio's expected role in racial interaction. In fact, African Americans were consciously excluded from full radio citizenship during the 1920s and 1930s; in 1939 not one of the nation's 778 radio stations were owned or operated by African Americans, and the decade's most popular radio show, 'Amos'n'Andy', was a blackface comedy that reinforced stereotypes of Blacks as lazy, corrupt and licentious (Ely 1994: 64–96).

Radio was also enlisted as a partial solution to the gendered manifestations of cosmopolitanism. Once it had escaped the hobbyist's shed, radio's potential to address female audiences quickly assumed great importance in the new broadcasting industry. Female listeners became prized radio audiences for advertizers, but always within a firmly domestic sphere (Newman 2004: 110). Although recent scholarship has found more subversive messages in interwar radio soap operas, broadcasters saw them as highly effective selling vehicles to women 'shut in' to their homes (Smulyan 1994: 89–91; Ware 2005: 58–61). The evening hours, with husbands and fathers back at home, were dedicated to more public sphere programming such as news, politics and highbrow culture (Hilmes 1997: 152–182).

I want now to turn to the origins of radio exceptionalism: who originated it, and for what purpose? Prior to the advent of broadcasting in 1920, radio hobbyists were the first advocates of radio's special destiny. These pioneers used radio exceptionalism to propagate a community of

like-minded enthusiasts convinced that they were the advance guard of a new radio age. According to Susan Douglas, the hobbyists' enthusiasm might also have helped to buttress diminishing male agency and frontier envy at a time when increasing numbers of American men felt tethered to clerical and industrial jobs in cities (Douglas 1987: 190–192).

After 1920, the burgeoning broadcasting industry grasped the baton of radio exceptionalism from the amateurs and turned it to their own purposes. Broadcasters such as AT&T, Westinghouse, General Electric, and then NBC and CBS, shunted the hobbyists aside on the basis that commercial, and particularly networked, broadcasting were the future of radio, and that their success was dependent upon appropriation of radio exceptionalism's rhetoric and promises. Radio exceptionalist rhetoric was useful to increase the networks' market; only networks were capable of providing the national audience upon which radio might exercise fully its unifying and enlightening influences. Radio exceptionalism also furthered the legitimacy of commercial radio by assisting them to fend off calls for radio reform during the 1920s. Radio's special characteristics, the networks claimed, could only be fulfilled under an 'American System' of private ownership and commercial foundation. This rhetoric was prevalent in the networks' campaigns against reformers' calls for a BBC-style broadcasting system in the United States (McChesney 1993: 92–120).

American broadcasters during the interwar period were by no means anti-regulatory zealots; their goal was to ward off unwanted regulation rather than federal oversight *per se*. Accordingly, the networks issued opportunistic demands for press-like freedom for radio. Radio, according to the major broadcasters, was not like the press because it needed to be licensed and regulated to avoid chaotic overcrowding on the airwaves, but it was like the press in its entitlement to freedom from censorship (Craig 2000: 139). Radio exceptionalism was also useful to national broadcasters as a way to legitimize themselves in an age of anti-monopolism and in a political culture based upon unfettered press freedom. By portraying radio as something unique, the networks carved out a special place in the American cultural and political firmament. Only by harnessing the power of a national audience, the networks argued, could they deliver the highest quality programming and so fulfil radio's sociocultural destiny.

The implications of radio exceptionalism for the development of American broadcasting were profound. It was used by the major broadcasters to entrench their corporate and commercial imperatives and institutions within the new medium; it also helped to cement the power of received culture and established elites to assimilate and attenuate potential technological and cultural challenges to their authority. These consequences were encouraged by the tendency of consumers/listeners to join this assimilative trend. Public opinion polls during the 1930s, although compromised by their proclivity towards loaded questions, expressed approval of the 'American System' of commercial and privately owned radio (National Association of Broadcasters 1933).

Perhaps radio can be seen as part of a twentieth-century spin on the technological sublime – that technology might cure the republic of its ills rather than indicate its strengths. Conversely, perhaps the example of radio should make us rethink the optimistic accounts of the nineteenth-century technological sublime. Perhaps that sublime, too, spoke more to fears than hopes. Rather than be allured by the sublime, we need to re-examine some of the fears that underlay nineteenth-century enthusiasm for the communication wonders of its age. Fears of the fragmentation of the republic added to the impact of the telegraph; concerns for the assimilation of immigrants and for the need for non-literate forms of public communication and education lay below the rapturous welcome accorded to radio, which burst upon the scene at the end of a generation's concerns about low standards of democracy after 1865, embodied by urban bosses and municipal corruption.

Before we can properly see the process and rhetoric of technological change on American values and culture we must also examine more closely the role of the corporate players, of political and cultural elites, and the deeper meanings of the rhetoric that Leo Marx – and especially John Kasson and Russell Nye – largely accepted at face value. This leads me to conclude regarding radio – and to suggest for the nineteenth century American reaction to technology – that the technological sublime may best be seen as a form of cultural hegemony rather than as a process of technological familiarization and assimilation. It seems clear that devices such as the technological sublime and radio exceptionalism had quite clear socio-political objectives and implications (Craig 2000: 279–283). Chief among these was the reassertion of political and cultural authority in the face of perceived and actual threats to the influence of large scale corporate concerns, cultural elites, and the political establishment.

Consideration of the radio sublime and radio exceptionalism also provides an opportunity to revisit the American exceptionalist assumptions behind the technological sublime. Marx, Kasson and Nye were in no doubt that they were dealing with something distinctively American (Marx 1964: 203; Kasson 1976: vii; Nye 1994: xiv). There is also a touch of the teleological in their work, as they attempted to explain why the United States industrialized so quickly and – they thought – so easily (Nye 1994: 110). A brief examination of the ways in which other societies greeted the advent of radio broadcasting provides different perspectives upon the American experience of radio and of radio exceptionalism.

Studies of the development of radio, and contemporary perceptions of its potential socio-political uses, make it clear that, on the surface at least, there was nothing uniquely American about radio exceptionalism. Other political cultures in Australia, Britain and Canada also looked upon radio broadcasting as a boon to education and civic life; all placed great rhetorical stress upon the importance of radio and upon the responsibility of their nascent broadcasting industries to develop a medium that promised a singular ability to reach the isolated, the 'shut in' and the illiterate, as well as

the ordinary citizen who was either too busy or too uninterested to pore over printed information and written cultural texts. As in the interwar United States, radio was seen as a potentially powerful salve to each polity's perceived problems – class division in Britain, geographical isolation in Australia, and cultural division in Canada.[2]

Australia, Britain and Canada experimented in different ways with forms of radio cartelization as a way to bring order to their broadcasting. The solutions they adopted all differed from the 'American system' of completely privately owned broadcasting dominated by two and then three networks, but they were exercises in cartelization nevertheless. Britain opted for a full radio monopoly, firstly through the privately owned British Broadcasting Company, and then after 1926 via the British Broadcasting Corporation (Briggs 1985: I: 67, 107). Australia and Canada evolved hybrid systems of public and private ownership of broadcasting, with their public broadcasters funded by British-style radio licence fees levied upon listeners.[3] All four political cultures, however, found it necessary to organize and regulate broadcasting with novel forms of statutory and corporate governance (Inglis 1983; Briggs 1985: 107). Political and cultural establishments in the United States, Australia, Britain and Canada all reacted with nervousness to radio's potentially unsettling effects on political and cultural life, and each devised ways of integrating it into their prevailing political and cultural norms and institutions.

This is not to say that there was a universal radio experience across the major English-speaking democracies of the interwar years. Each society mediated radio according to its own needs – and to the interests of its own cultural, economic and political vested interests. Interwar broadcasting should be seen as part of particular political cultures, rather than as their destroyer or reformer. Certainly, in the United States, the First Amendment did make a difference to the organization and regulation of the broadcasting industry. The idea of a BBC-like monopoly of publicly-owned broadcasting, or even the notion of a hybrid system as established in Australia and then Canada, made little headway within a culture imbued with the benefits of a free market in ideas and communication (McChesney 1993: 114). To this extent, US radio was exceptional in the interwar world; but so too were Australian and Canadian hybrid broadcasting systems.

It is appropriate to conclude by briefly exploring the applicability of the technological sublime and radio exceptionalism to post-radio mass media. In the case of television, there was no shortage of enthusiastic rhetoric in the United States, much of which was repetitive of the earlier language of radio exceptionalism. When David Sarnoff, President of RCA, announced in 1939 his company's success in developing television, he promised that TV would bring new interest in political life, that education by television would capture children's imaginations, that the nation's 'cultural level' would rise and that televised sermons would finally arrest the modern decline in church membership and religiosity. He concluded, 'Thus, the ultimate contribution of television will be its service towards unification of the life of the nation, and at the same time the greater development of the

2 For Britain see Asa Briggs (1985), *The BBC: The First Fifty Years,* Oxford University Press, for Australia see Lesley Johnson (1988), *The Unseen Voice: A Cultural History of Early Australian Radio* London: Routledge, p. 57, and for Canada see Charles A. Siepmann (1950), *Radio, Television and Society,* New York: Oxford University Press, pp. 154–167.

3 For the development of Canadian radio see Bill McNeil and Morris Wolfe (1982), *Signing On: The Birth of Radio in Canada,* Toronto: Doubleday Canada. For the formation of the Australian system of broadcasting see Colin Jones (1995), *Something in the Air: A History of Radio in Australia,* Sydney: Kangaroo Press.

life of the individual'. Through TV, 'America will rise to new heights as a nation of free people and high ideals' (Sarnoff 1939: 428).

Yet TV was, from the outset, integrated into the corporate, legislative and regulatory framework established by radio. This attenuated its own exceptional nature, and defined it clearly as a descendant of radio. TV also developed primarily within a rhetoric of entertainment rather than civic education, in contrast to the rhetoric of radio exceptionalism (Watson 1998: 3). This may have been a consequence of TV's visual dimension, but it may well have been because, by the 1940s, its radio masters had fully entrenched themselves and their media as commercial and entertainment in nature. That is to say the political battle against reformers had already been won, and so TV could develop as an avowedly entertainment medium for profit without undue squeamishness on the part of its owners. As a result, proponents and owners of the new medium could rely on the earlier rhetoric of radio exceptionalism to advocate and advertize TV, without any pressing socio-political or commercial imperatives to devise a new form of exceptionalist rhetoric or to revive a latter-day technological sublime.

Turning finally to the networked computer, rhetoric surrounding this most recent addition to the communication revolution corresponds most closely, ironically enough, to that which marked the nineteenth-century technological sublime. Early enthusiasm for the internet, and hopes for its future, reached almost transcendental levels as its proponents spelt out its potential to reconfigure political debate, cultural exchange and global interaction. As nineteenth-century Americans greeted the telegraph as a quasi-divine instrument of national unity, civic information and individual enlightenment, so too have their descendants hailed the internet as the key to a communication and information revolution whose importance transcends commercialism, regulation and nationality (Standage 1998).

An important element of these internet dreams has been to promise a new age of political and social engagement. Lawrence Grossman, a former president of NBC, promised in 1995 a new age of 'teledemocracy' in very familiar terms: 'Today's telecommunications technology may make it possible for our political system to return to the roots of Western democracy as it was first practiced in the city-states of ancient Greece. Tomorrow's telecommunications technology almost certainly will' (Grossman 1995: 33). The editor of *Wired* magazine was even more enthusiastic, promising from the networked computer 'social changes so profound their only parallel is probably the discovery of fire' (Quoted in Rosenzweig 1998: 1530). There was even a reversion to the old spirit behind ornamentation, as witnessed in the self-conscious attempts to make computers and their programs more understandable and less intimidating to consumers through use of familiar or archaic terminology such as 'mouse', 'portals' and 'webs'.

This indeed seems to be the newest version of the technological sublime, but it is vulnerable to the charge of unoriginality. In its coupling of new technology to the future health of the republic, the digital technological sublime also shares some of the less trumpeted features of its predecessors;

there are clear racial, wealth and class correlations with ownership of networked computers, and these are more marked than for radio ownership during the radio boom (National Telecommunication and Information Administration). In 2000, ten years after the creation of the World Wide Web, only 42 per cent of US households were connected to it (Infoplease 2005). The comparable figure for radio penetration 10 years after the beginning of commercial broadcasting was 61 per cent (United States Bureau of the Census 1976: 796). More recent figures, however, show that Internet penetration into US households has finally surpassed figures for radio penetration during the Depression years of the 1930s; in 2004, 14 years after the World Wide Web became available, 75 per cent of US households had a connection to it; in 1936, 16 years after the advent of radio broadcasting, 70 per cent of households owned a radio.[4]

In other ways, the similarities between the internet and radio are striking; both shared non-commercial origins, with inventors, defence agencies and hobbyists forming the advance guard of the internet revolution. There followed private commercial interests, who weathered the same types of struggles over commercialization and censorship that their radio forebears had waged and won. With such similarities in origin, it is tempting to conclude that the commercial maturation of the Internet will follow similar paths to that of the radio broadcasting industry 80 years before, with cartelization, increasingly captured regulation, and an unobtrusive abandonment of the rhetoric of the sublime and exceptionalism once its legislative and commercial objectives have been met.

4   For Internet penetration in 2004. See the Nielson/ NetRatings figures quoted in http://www. websiteoptimization. com/bw/0403. For radio penetration see US Bureau of the Census, *Historical Statistics of the United States*, II, p. 796.

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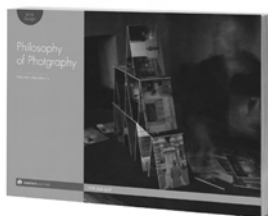
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