

**The coming of post-reflexive society: Commodification and language in digital  
capitalism**

**Philip Graham and Greg Hearn**

Submitted to Media International Australia – Special Issue: Technoculture.

## Abstract

Language is a unique aspect of human communication because it can be used to discuss itself in its own terms. For this reason, human societies potentially have superior capacities of co-ordination, reflexive self-correction, and innovation than other animal, physical or cybernetic systems. However, this analysis also reveals that language is interconnected with the economically and technologically mediated social sphere and hence is vulnerable to abstraction, objectification, reification, and therefore ideology – all of which are antithetical to its reflexive function, whilst paradoxically being a fundamental part of it. In particular, in capitalism, language is increasingly commodified within the social domains created and affected by ubiquitous communication technologies. The advent of the so-called ‘knowledge economy’ implicates exchangeable forms of thought (language) as the fundamental commodities of this emerging system. The historical point at which a ‘knowledge economy’ emerges, then, is the critical point at which thought itself becomes a commodified ‘thing’, and language becomes its “objective” means of exchange. However, the processes by which such commodification and objectification occurs obscures the unique social relations within which these language commodities are produced. The latest economic phase of capitalism – the knowledge economy – and the obfuscating trajectory which accompanies it, we argue, is destroying the reflexive capacity of language particularly through the process of commodification. This can be seen in that the language practices that have emerged in conjunction with digital technologies are increasingly non-reflexive and therefore less capable of self-critical, conscious change.

## Introduction

After several decades of stagnation, the collapse of capitalism at the end of the twentieth century has putatively been averted by a new growth cycle led by digital technologies and the full flowering of the knowledge economy (cf. Latham, 1998; Mulgan, 1997; Miller, Michalski, and Stevens, 1998; National Office for the Information Economy [NOIE], 1998; Rifkin, 1995; Reich, 1994; Yergin & Stanislaw, 1998: 369-70; Thurow, 1996; Bell 1999).

In fact less than 0.1 percent of people own a computer (Irving, 1998), and less than 400 of the world's richest people "are worth" more than the poorest 2.3 billion (Bauman, 1998). Inequality continues to escalate. Of the small percentage of humanity who do have access to the internet, less than 5 percent of these use it for commercial purposes (Graham, 1999a). Despite this, the bulk of international trade, by value, is carried on within the realm of the internet. It constitutes more than 100 times the amount of trade carried on within the physical realm (Graham, 1998; Saul, 1997; Thurow, 1996). In reality, new communication technologies most advance the interests of the 'one class ... which enjoys world citizenship –the international investor' (Griffin Cohen, in Barker, 1998).

Important aspects of language and its role in society underpin this social and technological trajectory. Indeed, language is intrinsic to social acceptance of, and engagement with, any kind of "knowledge economy". Because human knowledge is the product of a cognitive relationship between persons operating on and within social and physical environments, the fundamental commodity-form of the knowledge economy may be defined as an artefact of cognition that is exchanged between people. Ultimately, the knowledge-value of any such artefact is mediated by the language used to exchange it.

Here, we theoretically examine the emerging discursively and technologically constructed social domains of the knowledge economy, within which the language that sustains it is simultaneously reproduced. From the theoretical perspective we present here, the knowledge economy – precisely because its commodity-forms are exchanged through more or less valuable language – may be seen as less a technological phenomenon and more a political economy of language. Forms of technology, forms of language, forms of knowledge, forms of economy, and forms of polity mutually affect each other and result in – indeed define – particular forms of, and trajectories for, society.

We argue that the trajectory of media deployment is affecting language negatively, and that public discourse is consequently becoming objectified to the point at which it is failing in its most important role: critically reflexive communication. Public language is, as Postman (1985, 1993) and Saul (1992, 1997) argue, not only failing to communicate, but in many cases, appears to be designed to actually

*stop* meaningful public communication, and thus to stifle the production of public knowledge, an intrinsically social phenomenon which is at the heart of the democratic process (Rooney, in press).

While Saul (1997), Postman (1985, 1993), and more recently Bourdieu (1998b) have argued that perceptions of social life have been negatively impacted upon by the way issues are presented in mass media, there has been little examination into the reasons *why* this might be the case, especially in respect of language. The phenomena we identify here could be easily dismissed as the tendency for vested interests to deploy propaganda about and through the latest available media, as Chomsky (1992, 1997) has argued. But this is too simple and obvious an answer that offers little understanding about the nature of people as languageing creatures; the historical effects that new media appear to have; the nature and character of knowledge; and even about the potential for debate about desirable ends in increasingly massified and centralised societies. It merely confirms the obvious: that language can function both as a medium of articulation as well as a means of obfuscation; language can reveal and hide; it can clarify and mystify; it can open opportunities for new meaning – and it can close them.

In our analysis, the dialectical interaction between language, thought, and technology (meaning *how* we do things in society) is the pivotal explanatory construct. The way people have used media in recent history, especially over the last two centuries, has been instrumental in compressing language, thus distorting its social function (Innis, 1944).<sup>1</sup> While the “multimedia” potential of new media is touted as being “revolutionary” and “democratising” (Hague and Loader, 1999), we remain sceptical. For instance, unfamiliar pictures mean little on their own. Images require language, captions, commentary – linguistically constructed significance and context – to be meaningful in any socially effective way (Bourdieu, 1998b, pp. 20-21; Silverstone, 1999, pp. 34-35). This is even the case with famous images, such as the Mona Lisa for instance (Adorno, 1951/1974, pp. 140-141). The “sound bite” metaphor for public discourse has been well discussed (e.g. Postman, 1985). But the overall effects of this in an historical sense – *as an historical trajectory in itself* – remains mostly undiscussed.

Here, we will offer a theoretical explanation, and focus on two particular areas of public discourse to show how and why language is losing its effectiveness as a means of producing socially meaningful dialogue, useful public knowledge, and with this, social coherence.<sup>2</sup> In order to explicate our

---

<sup>1</sup> In linguistic terms, we are referring to such phenomena as technical nominalisations, whereby massive and complex social processes are reduced to a single term like “globalisation”. Such terms are deployed in an attempt to literally compress the sum total of all human interactions, along with a particular historical and ideological trajectory into a single word. “Globalisation” attempts to grasp the entirety of human experience whilst explaining precisely nothing (Mckenna and Graham, in press).

<sup>2</sup> Because language is a specifically human ability, we think that the deterioration of public language is dangerous. It has produced a public and political sphere that lacks the potential for reflexivity. It has produced, in Bewes’s (1997) words, an epidemic of consensus. It has produced a dangerous form of internationalised political centrism; a crude neoliberalism that enthrones “choice” and an illusory exchange system as social arbiter at the expense of civility; and a regressive tendency towards social

argument, we first show the interconnections between the principles of new technologies, the logic of the market, and changes in languaging processes. These principles are briefly illustrated via two cases in point which bear directly on our thesis: namely, “digital democracy” and higher education’s ongoing infatuation with digital technologies. Finally we excavate the underlying relationship between social identity, language and the social relations which embody production technologies and show how this explains the current devaluation of reflexivity in digital capitalism.

#### Market logic, new technologies and language

Clearly, as capital evolves as a social form of organisation, increasingly intangible aspects and products of social life become available to the processes of commodification (Graham, 1999a, 2000). A direct consequence of this is that valued forms of language, and therefore ways of knowing and saying, have become ‘knowledge commodities’. At different times in history, different forms of knowledge have been considered to be more or less useful, and hence more or less valuable. At our current point of development, the point at which certain forms of public language and thought become a predominant means of mental production, circulation, and exchange, as well as commodities in and of themselves, language loses its potential for meaningful public mediation and takes on all the characteristic contradictions of money (cf. Marx, 1973, chapt. 1). One clear example of this is the “proprietary” form of public relations, which is essentially private interests masquerading as objective news. Whether or not anyone is fooled into thinking that these public relations activities *are* objective news makes little difference. Indeed, the very fact that the public sphere is viewed with such a cynical eye (Bewes, 1997) merely adds to the normative dimension of negative language use, thus making public debate, almost unerringly, ‘truly false, or falsely true’ (Bourdieu, 1998a, pp. 30-31).

Because of the intertextuality of language, the danger, and indeed the observable effect of this, is that proprietary language, by which we mean the language of vested interests, insinuates itself into public and private domains alike: into education, politics, news, and interpersonal discourses, including the most intimate domains of the family, and even between lovers. An example of this is the pre-nuptial contract, in which the most personal of relationships is mediated and delineated by the logic of the contractual economic exchange system: language and money are converging in their social functions (other examples could be derived from the language of “quality time”; “relationship management”; “interpersonal competencies”; the discourses of “efficiencies” and “markets” being applied to such antithetical realms as education and governance; “investments” of time in relationships; and “equity targets” – even the designation of one’s lover as “partner” has become *sine qua non* in progressive circles, as if the emotional neutrality of business jargon can displace power inequalities just by euphemism). These putatively positive

---

darwinism that can only result in the subjection of persons to the economic system that thrives on ‘disposable people’ (Bales, 1999).

language practices, once transformed into the sterile terminologies of exchange and commerce, transform the most intimate of personal relationships into a mere subset of financial enterprise.

Another historically identifiable phenomenon is that “sexy”, or fashionable, technologies become metaphors for what we ourselves are, both socially and individually (Graham, 1999c, p. 4). That is, the very way we think about social organisation and mind alike comes to be derived metaphorically from dominant technologies. Since the 60’s and 70’s systems thinking, with its computer metaphors of inputs, outputs and so on, dominated the thought about organisations in much the same way machine bureaucracy came to be the organising principal of the late 19<sup>th</sup> and early 20<sup>th</sup> century. Organisations are now viewed as “networks” (Veccio, Hearn and Southey, 1996, ch 15), as is the whole of humanity (Castells, 1996). In the field of Artificial Intelligence (an oxymoron), the human mind is viewed, quite literally, as a computer (Pinker, 1997). It is a metaphor that has become naturalised and now attracts military funding. This is no different from the way people began to think literally of ‘clockwork mind’ and the ‘clockwork universe’ once Newton discovered the key to “keeping” time (Graham, 1999b). With advances in biotechnology and the rising popularity of neo-Darwinism, society is once again being construed as a superorganism. The language of Eugenics is once again becoming *fashionable*. The deployment of such metaphors makes it difficult to reflect on the nature of human beings, our social organisations, our minds, and consequently the character of knowledge, thus reducing our ability to enact variety and change at these most fundamental levels of existence.

Moreover, reflexivity requires processes of reflection, response, and subtle social interaction, all of which take time. The outcomes of actions (for example, policies or interventions) must be, and indeed are, observable. To the extent that language attempts to make such outcomes invisible in public discourse, reflexivity is further impaired. Terms such as “negative growth”, “downsizing”, “outsourcing”, and so on are linguistic distortions that serve to obscure and euphemise: they deny the realities to which they simultaneously refer. Moreover, the elimination of words – indeed, whole ways of thinking – from the social lexicon similarly acts to maintain the public invisibility of outcomes. If, for example, ethical concepts are displaced by purely economic ones, the erosion of ethical practices becomes less detectable as such.

Notions of time are similarly implicated in this process, and these too are directly associated with the effects of new media deployment (cf. Innis 1944, 1950, 1951; Graham, 2000). An emphasis on short time durations and immediate outcomes limits the ability to reflect on longer term effects. Currently, our use of media is oriented to control over outcomes across vast spaces. This naturally creates a disequilibrium in terms of social perceptions of time (Innis 1951, chaps. 2-3). And, of course, time is money.

A compounding tendency derives crudely from the informational characteristics of new media themselves. This has been the argument propounded about the negative effects of television and radio on

public discourse (the sound bite etc). It applies equally, if not more so, to digital media. Chat rooms are exemplary in this respect. The shorthand characteristics of the chat room genre (blind responses, difficulty of orchestrating turn taking, the clumsiness of real time textual communication) contribute to the fragmented and jargonised genre that has evolved as the standard in these digital 'fields' (cf. Bourdieu, 1998a, 1998b). Nevertheless, power relations, social exclusion, manipulation – all the characteristics of power present in *any* social field can be observed in the chat room. Technology is not a collection of *things*, it is *how* we humans do what we do (White, 1940). Thus we should not expect technology to produce changes in human nature *per se*.

Perhaps as a result of all these processes, new technologies seem to carry with them an inherent tendency towards hyperbole and utopianism. One way to elaborate how technology runs amok symbolically is to consider it in terms of its anthropological significance (Levi-Strauss, 1963) as fetish, idol, and totem. A fetish is essentially an object of private devotion or obsession. Totems are more social than fetishes. Though usually an animal, a totem may also be a plant, mineral or even an artificial object and is typically a sign of the clan or collectivity. Idols are also collective objects which are projections of absolute power and divinity. Technology can be thought of as fulfilling each of these symbolic object roles. And just as there was no clear objective link between traditional symbolic objects and the powers claimed for them technology enjoys its reputation often in the face of puzzling productivity paradoxes. The boom and bust of dot.com stocks similarly reflects a missing link between technology and productivity. It could be argued that the digital economy and e-commerce in particular are in fact destroying other sectors. Most "new" services offered by the dot.coms (that is those that are not chimeras) are simply changes to the distribution processes of existing services. No new markets are created by such activity. Moreover, serial collapses of whole economies can be directly attributed to financial speculation and manufactured illusions of wealth, mostly in the form of debt in its manifold, abstracted forms (cf. Saul, 1997; Graham, 1999a; Hellyer, 1999). The most recent collapses in East Asia, South America, and Eastern Europe could be argued to be the result of speculative excesses compounded by hyperinflated currency markets and the tendency of the financial sector to conjure abstraction upon abstraction, dub these "new products", and send them into circulation at the speed of light (Graham, 1998, 1999a, 2000). These are the most visibly devastating effects of digital technologies, digitised warfare notwithstanding.

A widespread lament is thus the ever spiralling costs of IT without parallel growth in productivity. We are not saying that ICT deployment can not and does not sometimes deliver efficiencies, but rather that there is a significant gap between promise and outcome. This is similarly true for individuals (Anthony, Hearn, Mandeville and Foster, 1999). The gap between rhetoric and reality is felt in other domains, and is a component of what we mean by the coming of post-reflexive society. Two examples are pertinent, namely, the claim for 'digital democracy' (cf. Hague and Loader, 1999; Miller, Michalski, and Stevens, 1998) and the claim for a new paradigm of learning in higher education (two of the domains essential for a reflexive society).

Enthusiasm for “digital direct democracy” via new media is in fact dangerous. In an ideal world, everybody would have direct access to their local representative via new media. And it is quite possible that this will become a reality in the very near future. But the most obvious difficulty is that all interests, especially in a “global” neo-liberal society (which really only refers to the richer countries of the “west”), are divergent. The logic of ‘competition of everyone against everyone’ (Bourdieu 1998a, p. 27) would, at best, turn direct “digital democracy” into little more than a moment-to-moment public opinion poll, a forum that would most likely be manipulated into an emotionally charged hyperpolitics of reaction. The public relations industry is already preparing to shape online opinion in the way that it has manipulated the content and agendas of newspapers, television, and radio since the late 1920s (cf. Bernays, 1928; Lasswell, 1927). The alienating effects of market logic apply equally to commodified thought and language as it does to any other commodified human activity (cf. Fairclough, 1992; Marx, 1844/1975, 1970, 1973, 1976, 1981).

Thus, we think, the faith of the “digital republicans” is misplaced. Firstly, it assumes that new media will displace or converge with the old. This is clearly not the case (Graham, 2000). New media are not automatic extensions of the old. The way they are deployed by people have invisible and complex relationships with the way existing media are deployed, and with the historical deployment of these (Graham, 2000). Second, the enthusiasm for direct democracy assumes that people are at all times rational, objective, and well informed. There is no evidence whatsoever to support such an assumption, despite all the best intentions and assertions since the Enlightenment. Third, direct democracy enthusiasts, especially in a written medium which such a system would demand, must assume equal abilities to use the written medium for expression: that is complete and patent nonsense. Such naïve eugenic dreams are redolent of late nineteenth century Fabianism (cf. Galton, 1904).<sup>3</sup> We do not expect such dreams to become a reality - ever.

The second dangerous unhinging between rhetoric and reality can be found in the digitalisation of higher education (Hearn and Scott, 1999 in Gidley and Inayatullah, 1999). Whilst the rhetoric of the new paradigm envisages enthusiastic networks of education “prosumers”, the reality is that the technology is at best to provide a different method of information logistics. At worst, however, the technology has become a way of centralising the development of new knowledge into the hands of an elite few. When deployed hand in hand with neoliberal rhetoric, technology is used to turn most university academics into poor typists, second rate graphic designers, and computer lab police officers. Class sizes are growing exponentially, curriculum is becoming more packaged and subject to ideological surveillance. In short,

---

<sup>3</sup> It is in the discussions following this paper that G.B. Shaw makes the remarks that ‘there is now no reasonable excuse for refusing to face the fact that nothing but a eugenic religion can save our race from the fate that has overtaken all previous civilisations’ (p. 21). The Fabian Society, along with most influential figures on the “left” throughout the world, distinguished themselves as enthusiastic eugenicists from the late nineteenth century until the holocaust in WWII (Paul, 1984).



new technologies are being deployed in the manner of a centralised knowledge factory. Knowledge production is expensive, and so the economies of scale inherent in the distributive capacities of new technologies means that the production aspect of higher education will become increasingly centralised and increasingly homogenised the more that technology is relied upon. The criteria for the value of knowledge is technological rhetoric rather than content. The CDrom and the web page are replacing the book as imprimaturs of form.

The potency of the mix between new technologies language and market logic is illustrated by the recent furore over QUT.COM (McKenna, 2000). In a “bold move” university administrators at Queensland University of Technology registered and implemented qut.com as the university’s official web URL and email suffix, and had dropped the .edu.au suffix that designates the domain as an Australian University. This resulted in a an unprecedented flood of hostile public emails amongst academics who saw the “bold move” as an assault on their motives and identities (as well as being an ill-thought through and autocratically engineered ambit move by management). The incident dramatically demonstrates the relationship we are positing between language, market logic, and new technologies. Moreover it points to the underlying dynamic involved in the recent techno-fetishist globalising tendencies: the dynamic is one that pertains specifically to social identity.

#### Social identity, language, and technology.

With its profit-oriented value system, digital capitalism has naturally become the source of all subjective identity formation, precisely because of its all-encompassing logic and its ideologically adaptive products. The resources of self-identity are, as always, fundamentally social, descriptive, and linguistic:

*in the network of linguistic interactions in which we move, we maintain an ongoing descriptive recursion which we call the “I”. It enables us to conserve our linguistic operational coherence and our adaptation in the domain of language (Maturana & Varela, 1987, p. 231, original italics).*

The logic of technologically mediated linguistic exchange is simultaneously the logic of alienation: the logic of thought alienated from its thinker, and value alienated from its source. Today, it is now the logic of identity formation and transformation; consumption and production; creation and destruction. Exchange-value – money – has become the fundamental use-value, the abstract definition of success and social inclusion (Graham, 2000). Thus, it is the source of self-production and -reproduction; physical, psychological, and social. This should provide some clues to the trajectory of the capitalist form of society: it evolves by extending its processes of appropriation, alienation, and production to the most intimate aspects of human identity and experience, including life, thought, emotion, birth, and death (Graham, 1999a).

The texture, creation, and constitution of knowledge ‘cannot be broached as a single process’ (Varela, 1992, p. 14). Rather, ‘[w]e are forced to discover regions that interweave in complex manners, and, in the case of humans, that extend beyond the strict confines of the body into the socio-linguistic register’ (p. 14). The knowledge economy is that abstract arena in which social relations of socio-production production are constituted, *and its knowledge commodities are wholly social in their source, significance, and impact.*

Humans have an emergent, continually developing identity; a linguistically, socio-historically, and materially mediated cognitive construct. Identity is a product of socially embedded knowledge that recursively emerges from linguistic interactions between the human organism and its social and physical environments. The domain of language is also the domain in which the dialectical tension between idealism and materialism emerges. The current state of digital capitalism is the evolutionary point in capitalist development at which alienated ‘thought inevitably becomes a commodity, and language the means of promoting that commodity’ (Horkheimer & Adorno 1947/1998: xi-xii; cf. also Adorno, 1964/1973). This is the perfection of capitalism, the ideal of an illusory system of exchange-values, the product of imagination burdened with nothing substantive, rigidified into the sole source of social utility and inclusion. Under digital capitalism, pure exchange-value becomes the means of identity production - self-description - for the original object of the capitalist production process: the individualised human being. Marx had extrapolated this logic to its seemingly inevitable conclusion:

the rule of person over person now becomes the universal rule of the *thing* over the *person*, the product of the producer. Just as the *equivalent*, value, contained the determination of the alienation of private property, so now we see that *money* is the sensuous, corporeal existence of that *alienation* (Marx, 1844/1975, p. 270).

Language as a commodified “thing” – as language produced for commercial consumption – becomes *alienated* language, thought’s commercialised means of exchange becomes the glitzy vehicle in which commodified thought travels between isolated individuals. Valued language becomes a ruling, alien *thing*. Herein we see that the most abstract and intimate social relations in digital capitalism *are the system’s primary source, means, and object of production*: social contact, language, and thought. Thus identity becomes both a commodity and a by-product of the process of hypercapitalist production. Societies continue to disintegrate under the social pressures ‘engendered and amplified by the logic of competition of everyone against everyone’ (Bourdieu, 1998, p. 27). Desire for, and identification with commodities underpins this logic: ‘... the felt need for a thing is the most obvious, irrefutable proof that the thing is part of *my* essence, that its being is for me and that its *property* is the property, the peculiar quality peculiar to my essence’ (Marx, 1844/1975, p. 267). Exchange-value is, today, exchangeable for identity. Identity is exchangeable for desire. The vicious circularity of hypercapitalism’s “knowledge economy” is underpinned by the logic of the system upon which it is built: the alienated thoughts of the literate mind and the alienated value of life. This is the coming of post-reflexive society.

## **Conclusion**

The perspective we have described here highlights the inseparable relatedness of economy, language, technology and identity. Each of these factors interdependently creates the circumstances of instantiation for each of the others. Language is the processual, socially interactive phenomenon that coordinates, regulates, describes, and exchanges the sociocognitive understandings which emerge from each instance of humanity, and which coordinates the production and reproduction of the social systems within which these occur. These understandings, in turn, create the conditions in which humans flourish, albeit to widely varying degrees of satisfaction and success. Language is intrinsically empirical; it facilitates the socially shared distinctions by which we come to know our world. At a time in history when little, if anything, in affluent societies remains outside the technological apparatus that expedites increasing concentrations of communicative power, the imperative for critical communication studies is to understand and thereby moderate the meaning of the medium and the degree to which it operates as a dominating influence on social consciousness, and the degree to which we are prepared to allow the most intimate aspects of the public weal to be appropriated and sold back to us, second-hand, as something new. Language, by its very nature, is the only tool humanity has that can address these critical issues. That language itself has now becoming captive to the commodification process, via digital technologies is a cause for great concern.

## References

- Adorno, T.W. (1951/1974). Minima Moralia: Reflections from damaged life. (E.F.N. Jephcott, Trans.)  
NLB: London.
- Adorno, T.W. (1964/1973) *The jargon of authenticity* (K. Tarnowski & F. Will, Trans). London: Routledge  
& Kegan Paul.
- Anthony, D., Hearn, G., Mandeville .T. Foster, J., (1999)The importance of time in the diffusion of  
Information and Communication Technologies (ICTs): Some preliminary research findings. Paper  
presented to the 1999 *Communications Research Forum*, Canberra.
- Bales, K. (1999). Disposable people: New slavery in the global economy. London: University of California  
Press.
- Barker, G. (1998, January 19). Money, foreign investment, and the new world order. *The Australian  
Financial Review*, p. 11.
- Bauman, Z. (1998) On glocalization: Or globalization for some, localization for others. *Thesis Eleven*, (54),  
37-49.
- Bernays, E. L. (1928). Manipulating public opinion: The why and the how. American Journal of Sociology,  
33, (6): 958-971.
- Bourdieu, P. (1998a). Practical reason: On the the theory of practice. London: Polity.
- Bourdieu, P. (1998b). On television. Pluto: London.
- Fairclough, N. (1992). *Discourse and social change.* Cambridge: Polity Press.
- Fukuyama, F. (1995) *Trust: The social virtues and the creation of prosperity.* London: Penguin.
- Galton, F. (1904). Eugenics: Its definition, scope, and aims. American Journal of Sociology, 10, (1): 1-25.
- Garnham, N. (1990). Capitalism and communication: Global culture and the economics of information.  
London: Sage.
- Graham, P. (1998). Globalist fallacies, fictions, and facts: The MAI and neo-classic ideology. *Australian  
Rationalist*, (46), 15-21.
- Graham, P. (1999a). Critical systems theory: A political economy of language, thought, and technology.  
Communication Research, 26 (4), 482-507.
- Graham, P. (1999b). Heidegger's hippies: A dissenting voice on "the problem of the subject" [Conference  
paper] Identities in action! 10-12 December, 1999, University of Wales.
- Graham, P. (1999c). Autopoiesis, language, literacy, and the brain. Fine Print, 22, (2): 2-5.
- Graham, P. (2000). Hypercapitalism: A political economy of informational idealism. New Media and  
Society, 2, (2): 131-156.
- Graham, P. & McKenna, B. (2000). A theoretical and analytical synthesis of autopoiesis and sociolinguistics  
for the study of organisational communication. Social Semiotics, 10, (1): 41-59.
- Hague, B. N. & Loader, B. D. (Eds.) (1999). Digital democracy: Discourse and decision making in the  
information age. London: Routledge.

- Hearn, G., Mandeville, T., & Anthony, D. (1998) *The communication superhighway: social and economic change in the digital age*. Sydney: Allen & Unwin.
- Hellyer, P. (1999). Let's start a war – On mediocrity. [On-line]. (URL consulted April 27 1999: <http://dove.mtx.net.au/~hermann/hellyer.htm>) Toronto: Canadian Action Party.
- Horkheimer, M. & Adorno, T. W. (1947/1998). The dialectic of enlightenment (J. Cumming, Trans.). New York: Continuum.
- Innis, H. A. (1944). On the Economic Significance of Culture. *Journal of Economic History*, 4, [Issue Supplement: The Tasks of Economic History]: 80-97.
- Innis, H.A. (1950). Empire and communications. Oxford: Clarendon Press.
- Innis, H.A. (1951). The bias of communication. Toronto: Toronto University Press.
- Pinker, S. (1997) *How the mind works*. Maryborough, Victoria: Penguin.
- Latham, M. (1998). *Civilising global capital: New thinking for Australian Labor*. Allen & Unwin: Sydney.
- Lasswell, H. D. (1927). The theory of political propaganda. *The American Political Science Review*, 21, (3): 627-631.
- Levi-Strauss, C. (1963). *Totemism*. Boston: Beacon Press.
- Luhmann, N. (1995). *Social systems*. Stanford, CA: Stanford University Press.
- Maturana, H. & Varela, F. (1980). *Autopoiesis and cognition: The realisation of the living*. Dordrecht Holland: Reidel.
- McKenna, B. & Graham, P. (in press). Technocratic discourse: A primer. Journal of Scientific and Technical Writing.
- Marx, K. (1844/1975). Economic and philosophical manuscripts. In Karl Marx: Early writings (Trans. R. Livingstone & G. Benton), (279-400). London: Penguin.
- Marx, K. (1846/1972). The German ideology. In R.C. Tucker (Ed.), The Marx-Engels Reader (110-66). New York: W.W. Norton.
- Marx, K. (1970). A contribution to the critique of political economy (S.W. Ryazlanskaya, Trans.), (M. Dobbs, Ed.). Moscow: Progress.
- Marx, K. (1973). Grundrisse: Foundations of the critique of political economy (Rough draft) (M. Nicolaus, Trans.). London: Penguin.
- Marx, K. (1976) *Capital* (Vol. 1). B. Fowkes (Trans). Penguin: London.
- Marx, K. (1981) *Capital* (Vol. 3). D. Fernbach (Trans). Penguin: London.
- Mulgan, G. (1997) *Connexity: How to live in a connected world*. Random London: House.
- National Office for the Information Economy [NOIE] (1998). *Towards an Australian strategy for the information economy: A preliminary statement of the government's policy approach and a basis for business and community consultation*. Available online at: <http://www.noie.gov.au/reports/index.html> [accessed 27 November, 1998].

- Paul, D. (1984). Eugenics and the left. *Journal of the history of ideas*, 45, (4): 567-590.
- Postman, N. (1985). *Amusing ourselves to death*. Methuen: London.
- Postman, N. (1993). *Technopoly: The surrender of culture to technology*. Vintage: New York.
- Reich, R. (1992) *The work of nations*. Vintage: New York.
- Rifkin, J. (1996) *The end of work: The decline of the global labor force and the dawn of the post-market era*. Putnam: New York.
- Rooney, D. (in press). Knowledge and Epistemology in Strategic University Management. *New Horizons*.
- Saul, J.R. (1992). *Voltaire's bastards*. Ontario, Canada: Penguin.
- Saul, J.R. (1997) *The unconscious civilization*. Maryborough, Australia: Penguin.
- Silverstone, R. (1999). *Why study the media?* London: Sage.
- Thurow, L. C. (1997). *The future of capitalism: How today's economic forces will shape tomorrow's world*. St Leonards, Australia: Allen & Unwin.
- Varela, F. (1984). Two principles for self-organisation. In H. Ulrich & G. J. B. Probst (1984), (Eds.). *Self-organization and management of social systems: Insights promises, doubts, and questions*, (pp. 25-32). New York: Springer-Verlag.
- Varela, F. (1992). Autopoiesis and a biology of intentionality. In B. McMullin & N. Murphy (1992), (Eds.). *Autopoiesis and perception: A workshop with ESPRIT BRA 3352*. Dublin: Dublin City University, August 25-26, 1992.
- Varela, F., Thompson, E., & Rosch, E. (1993). *The embodied mind*. Cambridge, MA: MIT Press.
- White, L. Jr (1940). Technology and invention in the middle ages. *Speculum: A journal of mediaeval studies*, 15, (2): 141-159.
- Yergin, D. & Stanislaw, J. (1998) *The commanding heights: The battle between government and the marketplace that is remaking the modern world*. Simon & Schuster: New York.