important questions about who is constructing aboriginality through representing it on television. Also, the public service nature of Aboriginal television services imposes its own restraints upon what kind of television emerges.

I had some minor criticisms of this book. Firstly, there were several places where a table or chart may have helped to present some of the information in a more easily digestible form. For example, a chart showing the proportion of SBS's foreign language programming, compared with the proportional ethnic composition of Australia would have been useful, as might a table showing the relative place of advertising revenue in the GNPs of various countries in comparison with Australia's, or the proportion of local to international program sourcing over a number of years or compared with other countries. There were also some annoying editorial glitches, such as several disagreements of verb and subject, and some misspellings (for example, "proferred", "comeraperson"). Such errors seem to be on the increase in contemporary publishing. Perhaps their purpose is to keep the pedants and ex-English teachers among us perpetually vigilant.

The major strengths of the book are the authors' breadth of research in the various discipline areas which relate to something as polymorphous as television is in Australian cultural , social, economic and political life, and the supporting of the book's arguments by a vast amount of data from "the ground". This data is both quantitative in the form of statistics, and qualitative in the form of comments from sources as varied as Aboriginal writer Mudrooroo Narogin and media magnate Kerry Packer. It is no mean achievement that the book manages to synthesise all of this data into a thoughtful series of interweaving discourses on Australia's complex television culture. I recommend the book to both students and practitioners of communications policy and the Australian television industry, and to the "Australian viewing public" generally.

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Reforming Universal Service: the Future of Consumer Access and Equity in Australian Telecommunications *by Ian Wilson and Gerard Goggin* (Consumers' Telecommunications Network, Sydney, 1993) pp xii + 119, $35.00 ISBN 0 646 16760X.

Ian Wilson and Gerard Goggin seek to demonstrate that universal service, ' the goal of making telecommunications universally accessible to all consumers' (pi), consists of: universal geographic availability, universal accessibility, universal affordability, universal technological standard, and universal telecommunications and participation in society. The book's chapters, which attempt to exemplify these dimensions of universal service, include a brief history of universal service, dimensions of universal service, future considerations for universal service delivery, and reforming Australian telecommunications (including a series of thirty-three recommendations to carry this out).

Universal geographic availability is defined by the authors as the provision of a full range of identical services available irrespective of location, including pay phones. *Universal accessibility* is defined as provision of equipment to ensure functionality for all users and non-discriminatory access to all facilities. *Universal technological standard* includes policies to ensure that innovations are made universal on the basis of need, social expectation and social desirability, including uniform quality of service for all users, and periodic upgrading

of the standard telecommunications service. *Universal telecommunications and participation in society* is conceived as policies of telecommunications use which enable full participation in society, protection of freedom of speech and freedom of information through policies of common carriage and content-neutrality, and protection of privacy.

The authors argue that the Universal Service Obligation as defined in the 1991 Telecommunications Act be amended to include their definitions of universal service and that AUSTEL be given additional powers as a 'universal service advocate' ('including AUSTEL funding consumer groups to assist in ensuring that universal service is addressed') (p vii). A refined Universal Service Levy Fund would assist with implementation of universal service objectives. Recommendations by the authors include, among others, suggested amendments to standard service definitions, increased access to enhanced services under a universal service umbrella, establishment of systems which assist the disadvantaged (for example the deaf), and better government policy on public access to new information and communication technologies.

The authors would appear to be substantially correct in their general thrust to remove unsustainable minimal definitions of universal service. Universal service as a goal cannot be separated from developments in technology (p. 13). That is to say, you cannot stick to the old POTS (plain old telephone service) for a definition of universal service when the basic infrastructure and services for delivery are changing so rapidly and in such fundamental ways.

The book's implicit support for an 'equality of outcome' point of view acts as a nice corrective to AUSTEL's explicit 'equality of opportunity' philosophy. There is good reason, of course, for taking an equality of outcome position in universal service. Equalising opportunity is almost impossible in a society such as ours without reducing the absolute level of inequality in our society. Recommendation 19, for example, argues that there should be a policy to remove existing economic barriers to achieve 100% ownership for all consumers who wish to own and access telecommunications services (p. 90). However, the authors' approach does beg the question how far social policy can (or should) go to reduce the absolute level of inequality in our society and how far government should intervene to do so.

To use the jargon of 'rights', it would seem extreme to push 'positive rights' too far in the universal service debate. For example, on the 'positive rights' point of view, we should be free to do various things — free to serve the common interest when we are encouraged to overcome selfishness, free to choose rationally when we have prohibited alcohol and smoking, free to use telecommunications when we are required to pay to reduce 'absolute inequality'. The difficulty, of course, in the last example, is that there are problems associated with definitions of 'absolute inequality'— and this is something that the book does not address.

The authors are ambitious in their attempt to provide comprehensive definitions of universal service. All of the 'dimensions' of universal service advocated by the authors are, however, and not surprisingly, hard to operationalise. This is particularly the case with one of the most important notions put forward, 'universal telecommunications and participation', which would appear to be a superordinate conception under which all the other 'dimensions' listed by the authors could be subsumed. The authors do not appear to be fully aware of the ramifications of this conception and the implications it has for communication policy generally and universal service in particular. One obvious implication of policy based on the authors' conception is the setting of a baseline of information (and communication) need, or perhaps more precisely, information and communication poverty. Despite criticism of 'poverty lines', such indicators do serve a useful purpose in understanding deprivation (absolute or relative) and opening debate. 'Universal participation' in information society would appear to require empirical indicators of some kind.

The authors draw on a variety of sources to highlight the nature of the dimensions of universal service, but the recommendations still come across to this reader as broad generalisations about what people should have, specific claims for assistance, and demands for AUSTEL to supervise them. An obvious problem that emerges to a reader is the lack empirical data to demonstrate how the 'dimensions' might work and which empirical indicators might be appropriate. While figures on telephone connections are cited (for example, 10% of Aborigines having access to a telephone) and the authors discuss how important the telephone is to women and other groups, there is an obvious lack of empirical data on information and communication needs and the substantive concerns of consumers in their everyday telecommunications activities.

These criticisms do not diminish the central point of the book, namely that conceptions of universal service should reflect a rapidly changing social and technological environment. However, more work needs to be done on how the proposed dimensions of universal service can be operationalised and what 'participation' in an information society might mean.

The book is appropriate for reading lists of courses interested in communication policy and anyone interested in the universal service debate.

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The Advancement of Science *by Philip Kitcher* (Oxford University Press, Oxford, 1993) pp. vii + 416, $59.95, ISBN 0-19-504268-5.

Most books on the philosophy of science which have appeared in the aftermath of the *Structure of Scientific Revolutions* have been specialised. By this I mean that they have not attempted to address large and general issues about science as a whole; they have not considered, for instance, what the scientific method is, what are the overall aims of science, how science advances, and so forth. Since Kuhn, most philosophers of science have concerned themselves with particular issues in particular sciences: the measurement problem in quantum mechanics, the epistemology of experiment in psychology, the reduction of chemistry to physics, etc. (My own work illustrates this trend: for the last twenty years I have always added the qualification that my theory of explanation is only intended to apply to physical science). In this new book Philip Kitcher swims against this tide; he wants to give an account of the advancement of science and in so doing addresses general issues that pertain to science as a whole.

The official philosophy of science which Kuhn and others attacked Kitcher calls 'Legend" — it is in fact an amalgam made up of Logical Empiricism, Popperianism and a few other strands. Throughout his book, Kitcher orients his discussion with respect to both Legend and Legend's Legacy, i.e. positions and viewpoints that have taken hold in response to the perceived failure of Legend. Take, for example, the question of progress in science: Legend has a couple variations on this theme, but essentially the idea was that science is cumulative in the sense that, as scientists continued to work and build on previous knowledge, more is discovered about the world, in the form of both facts and theories.

The radical Kuhnian response to this is that successive paradigms are incommensurable and hence there is nothing to measure progress against, and so the concept of progress is just not applicable to science. Certain other notions allied to the old view of progress, such that