those of other years we find that 1987 was not at all typical. While in 1987 the USA far outperformed Japan - 578 films and 286 films respectively - in 1989 Japan, on this measure, far out-performed the US - 345 films for the USA and 777 for Japan. In 1991 Mexico only scored 32, way out of any 'top ten'. Indeed it was beaten by Australia with 33. The presentation of aggregated and trend data would be much more valuable than just providing the latest available and possible misleading snapshot. This is yet another reason why I cannot recommend this volume as the major text for a subject in global communication.

NOTES AND REFERENCES

1 Mohamed Ibrahim Kamel, *The Camp David Accords: A Testimony,* KPI, London, 1986, p.14

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Satellite Television in Western Europe *by Richard Collins,* revised edition, Academic Research Monograph:1, (John Libby & Company Ltd., London, England, 1992) pp.v+125, £ 18.00, ISBN 0-86196-388-1

For anyone who starts to read this book with the expectation that it will present a picture of future prosperity in satellite television markets, then the message of this book will be quite striking. This book concludes that the satellite television industry is in a delicate position with respect to its survival. This industry highly depends on national terrestrial broadcasting policies in order to survive (pp.10-11). This conclusion is supported by a number of European country experiences. For example, in those countries (eg. Germany) where potential TV sponsors are excluded from terrestrial television and control program contents, satellite television programs have become popular (pp.7, 45,79-81). In countries (eg. The Netherlands) where the number of viewers is not enough to sustain a variety of home made television programs, satellite programs are also in favour - viewers would rather watch the re-transmission of terrestrial broadcast programs of neighboring states (pp, 8,56). Satellite television viewers must bear higher costs than terresterial viewers to watch programs, including the initial cost for antennas and decoders. There is more than one antenna/decoder if several programs from different satellites are viewed and, for most of the time, there is also a monthly subscription fee. But there is the contradiction that the production cost paid for a satellite program is much less than that of a terrestrial program: satellite television viewers have to pay more for less quality (pp.101-102). Some of the initial cost burden for viewers could be avoided if a country's cable system re-transmitted satellite programs, but most of the existing cables do not permit multi-channel access (pp.55-56). Overall, no single satellite television operator is free from deficit financing.

Putting aside his pessimistic conclusion for a moment, let me illustrate the contents of the book. Henry Mayer commenting on the previous edition of this book said that it attempts to organize rapidly changing public information, much of which is scattered in trade journals, and presents it clearly. This book successfully organizes this updated and detailed information. Although the majority of this book is devoted to reviewing the current situation in the European satellite television market, it starts with two chapters of general background on satellites; that is the history (Chapter 1: The History of Satellite Television) and technology (Chapter 2: The Shaping of Satellite Television). The contents of these chapters stand

independently of what follows. The next three chapters are informative to researchers and those who are engaged in this business in East/West Europe. Even current and potential satellite television viewers in this region may find them interesting. The following three chapters are as follows: Chapter 3: 'The Funding of Satellite Television' discusses whether programs are financed by sponsors or subscription fees; Chapter 4: 'The Audience' tells us what programs are popular in which country; and Chapter 5: 'European Television Satellites' gives information as to which satellites deliver which program. Chapter 6: 'The Future of Satellite Television in Europe', questions the future of satellite broadcasting.

This book is a revised edition and was originally published in 1989. I suspect that the revision was written around March 1991. The period 1989-1991 was important for Europe historically, not only for its broadcasting market but also for European economic and political structures as a whole. This meant that the author had much to examine and write about, but at the same time there was the difficulty that what was happening was either temporary or transitory.

Let us reflect on the changes in the European satellite broadcasting market which have occurred in these years. In 1989, the medium powered satellite (the author calls it as the Third Generation Satellite), Astra of SES (Luxembourg) started to transmit programs that had previously been delivered by low powered satellites such as Intelsat and Eutelsat. It was a revolutionary event because viewers thereafter were able to receive satellite signals directly, even though Astra was not designated a Direct Broadcast Satellite (DBS) under the International Telecommunicaton Union's (ITU) classification. Subsequently, one of the "real" DBS, Marco Polo of BSB (UK), started to operate while TDF-1(France), a competitor, was found incapable of providing a full line of service. It was these evolutionary changes in the broadcasting market that urged the author to revise the edition after only three years. On the other hand, he successfully included the description of the latest of BSkyB's operations. BSkyB, a program provider to UK viewers established in 1990 as a result of the merger of BSB and Sky Television, attracted 2.3 million UK homes according to a BSkyB press release or 1.6 million according to other sources. Whichever number is correct, it promoted that country to be No.1 in that "the UK holds more DBS homes than any other single national market" (p.108). Collins was able to focus on the UK's performance in Chapter 7 - 'Lessons from the Second Generation Satellite Television'. He realizes, however, that the UK's lead over other European countries cannot last forever. From the regulatory aspect, the European Commission's "Television without Frontiers" Directive took effect in October 1991 and that prevents a single state from regulating the reception of intentional and unintentional spillover radiowave transmissions. When German and French program providers, who could not provide all the programs they originally planned due to the technical deficiencies of TDF-1, exhibit their full line up, the UK's national satellite viewers should easily be "internationalized". Collins is concerned, above all, with the effect of erotic films provided by these two countries (pp.2,52,82,95,103): they may carry UK viewers away from "high brow" national programs. If his nightmare comes true, the author may be forced to revise the edition again. If it should be the case, I would suggest he take that opportunity to expand the coverage of the book by examining its title, "...Western Europe" and the names of the countries used in this book such as "West Germany" or "Soviet Union", for they give an impression that the book unnecessarily limits the footprint of the European satellite market. In the era when Europe is increasingly integrated toward a single Pan-European market, why should the market for satellite broadcasting be an exception? Nevertheless, the author may raise an objection because he states in this book that Pan-European programs are not viable because: they limit sponsors to a few conglomerates (p.48); restrict program choice, as a result of seeking common interests of viewers who have differences in language, culture, taste, availability of terrestrial broadcasting; countries

have different rates of cable penetration (p.44,48). Each of his reasons are persuasive and I wonder why the European case has ended up with this controversial result in contrast to the situation in the Asian region, typified by the success of Star TV, a Pan-Asian satellite TV program, where the identical differences exist across countries. The author should have some explanation. The satellite broadcasting market has expanded opportunities for both hardware manufacturers and software producers and has provided advertising opportunities to numerous growing companies. This and increased program choice has upgraded the quality of life for viewers worldwide. This book provides an opportunity to reconsider whether such a general brief is still viable in other regional markets including Asia-Oceania .

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The Uses of Life: A History of Biotechnology *by Robert Bud* (Cambridge University Press, Cambridge, 1993), pp. xvii + 299, A$99.00, ISBN 0-521-38240-8

Biotechnology is a contested term. Authors of biotechnology policy documents often remark on the difficulties of arriving at a workable definition of the field; one that enables policy statements to be translated into action. Yet there is rarely the space in such documents to devote much reflective attention to the process involved in arriving at definitions of biotechnology. Nor is much attention paid to the more subtle consequences of adopting any particular definition, consequences that go beyond what does or does not get funded.

Robert Bud's history of biotechnology might appear, at first glance, to be in a similar vein, merely a chronological account of the various definitions that biotechnology has embraced over the past hundred years. This would be a misconception. The thorough scholarship and meticulous detail of the work might initially give the impression that the book is only of interest to specialist historians. This would be a mistake.

What Bud has produced amounts to much more than a straightforward evolutionary narrative of the 'rise of biotechnology'. Far from telling us how one development led to another culminating in our modern conception of the word, *The Uses of Life* constitutes a genealogy of many biotechnologies. It documents the various meanings of biotechnology which have been employed, forgotten and sometimes completely re-invented. The result is a rich account of why some of these meanings prevailed over others in the various struggles to define the term itself; at stake was the very meaning of biotechnology.

Bud starts by unearthing an almost forgotten term, zymotechnology. In the nineteenth century this encompassed the study of all types of industrial fermentation. From chemistry applied to brewing, over the course of the century zymotechnics came to denote a confluence of microbiology, chemistry and engineering applied to a range of problems. Then, through other transient terms such as chemurgy, Bud takes us to the 1920s and 1930s with the first suggestions of a biological science applied to society, encapsulated in terms such as biotechnics, social biology and, of course, biotechnology. The middle parts of the book then provide a post-WWII account of biotechnology; first as a sub-set of chemical engineering, intimately bound up with Cold War concerns over biological warfare, then as a proposed ecological panacea in the 1970s.