WHAT, IF ANYTHING, IS A FUNCTION?

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Drawing on the works of the natural history thinker Stephen Jay Gould, the author discusses the notion of 'function' as used by archivists and how approaches to classification in the natural world can enlighten our understanding of relationships between functions. Tentative conclusions are drawn regarding the usefulness of function as a retrieval tool by comparison with other approaches such as provenance and subject information.

We usually think of functions as **characteristics** (like dates, quantities, format) of the **things** (organisations, families, record groups, fonds, companies, unions, government departments and agencies, persons, series) which it is the purpose of archival programs to document. Functions delineate and describe the activities which produce records. After its name and dates of operation, what a records-producing organisation or agency does attracts our attention when we are describing it. Functions differentiate agencies (health agencies differ from education agencies) from each other. They amplify our understanding of each different agency's nature and purpose (education functions include schooling, further education, apprenticeship and vocational training, university education, migrant education, and industrial retraining but exclude kindergartens, pre-school, and day care).

The language of functions is used to index records and provenance. It provides a quarry of indexable headings. Retrieving information about records-producing organisations and agencies and the records they produce is facilitated when function terms are used to enhance free text prose descriptions. Whether in free text description (for on-line free text search and retrieval) or used as data elements (to systematically generate traditional indexes), functional language must be controlled because —

- language contemporaneous with the records is not itself capable of being used for retrieval, and
- a language which is imposed over a body of records of any scope or complexity must achieve some level of consistency to be of any practical use.

Functions also provide a way of showing relationships between records-producing organisations and agencies and the records they produce. In a world of administrative change, the organisational structures which still form the basis of almost all work on provenance and context are breaking up and reforming all the time. Function transfers are the evidence of all administrative relationships between predecessor and successor records creators and a more stable and long lived administrative focal point (at least on one view).

What did an agency do? How are its functions to be understood by reference to the overall functions and responsibility of the administration of which it was part? What are the boundaries of one agency's functional responsibilities and how did they relate to those of another? What functional responsibilities of the creating agency did each series represent?

Functions are the stuff of information about units of description in an archival documentation program. The three ways in which a controlled functional language is most commonly used —

- to formulate prose text description
- to formulate data elements for indexing, and
- to formulate previous/subsequent relationships

are set out diagrammatically in Figure 1.

Unit of Description
(Group, Fonds, Agency, or Series, etc)

Ref. No.: 234

Name: XXXXX
Dates: [start to finish]

Description: incl. free text outline of functions/activities

Descriptors (data elements):
— function index terms

Relationships (data elements):
←←← Subsequent to:
1868: 123 (function aaaaa)
1868: 123 (function bbbbb)
1870: 345 (function ccccc)
Previous to →→→:
1890: 987 (function aaaaa)
1890: 876 (function bbbbb)
1890: 987 (function ccccc)

Unit of Description
(Group, Fonds, Agency, or Series, etc)

Ref. No.: 987

Name: YYYYY
Dates: [start to finish]

Description: incl. free text outline of functions/activities

Descriptors (data elements):
— function index terms

Relationships (data elements):
←←← Subsequent to:
1890: 234 (function aaaaa)
1890: 234 (function ccccc)
1920: 678 (function ddddd)
Previous to →→→:
1947: 876 (function aaaaa)
1947: 876 (function ccccc)
1947: 765 (function eeeee)

Figure 1

Using functions like this mirrors traditional subject indexing and thesaurus control. When computerising, however, it is more convenient to treat data about relationships not as two data elements (one for each related unit of description) but as a single data element in its own right. In a manual system, checking that both ends of the link are shown (that a 'previous to' link in unit 234 is shown as a 'subsequent to' in unit 987) is an important editorial task. It is just like making sure that each 'see also' reference in a traditional thesaurus has its corresponding 'xx' under the heading for the term referred to.

Relationship data is better handled on computerised systems by treating such links as one data element — to express the relationship as a unit of description in its own right with its own identity and characteristics — see Figure 2.

Towards a methodology of functions

Readers of Stephen Jay Gould's delightful essays on natural history will recognise my indebtedness to him (and through him to Albert E.

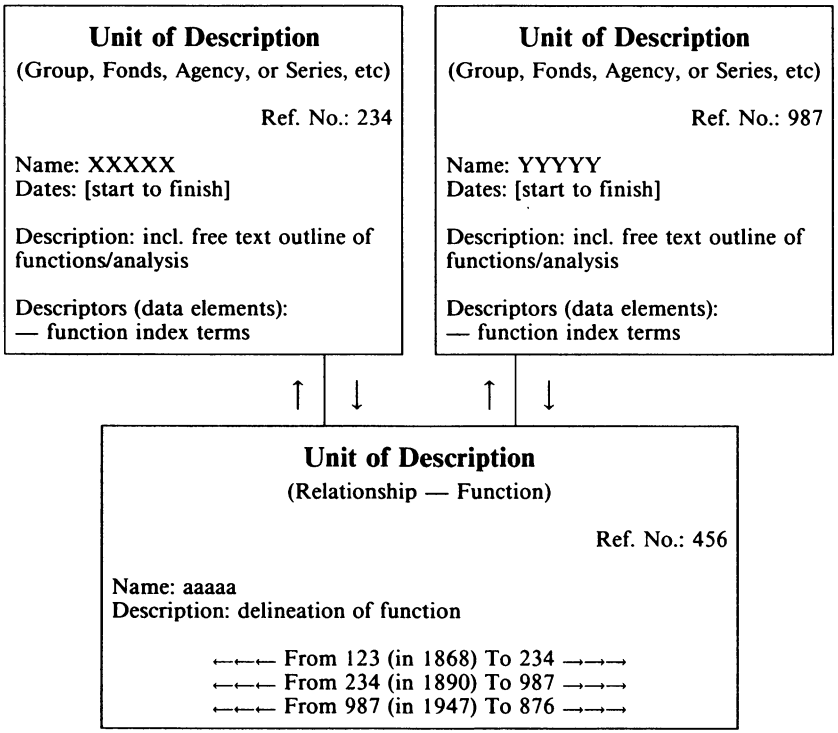

Figure 2

Wood) for the title of this article.[1] Many of those essays are less studies of natural history than explorations of the history and nature of such study. In that fashion, if not with Gould's style and wit, I propose now to look at functions and to explore some aspects of their study. Among issues that deserve our attention are a few uncannily like those arising out of the study of nature.

Do functions have an objective, 'scientific' reality? Is it our task, by observation, to discover and delineate what is there or to artificially construct an orderliness which is not real? What rules (if any) determine the taxonomy and naming of functions? How broad or narrow should the scope of a function be? What distinguishes variations within a function (the same activity carried out by different agencies in different localities, for example) from differences which characterise a new function (the same activity carried out by the same agency in one locality but differently in respect of adults and children)? What rules (if any) govern the evolution of functions? Does a change of name indicate a new function? How do we separate changed functions from earlier (different) functions with the same name? Do functions

evolve gradually by almost imperceptible degrees (Darwinian) or in sudden catastrophic jerks ('punctuated equilibrium').

In the literature of descriptive practice, functions are routinely nominated as important tools. Yet (so far as I am aware) little has been written about the science or methodology of functional analysis.

I may not know what a function is, but I am sure about what it is not. A function is not a subject. A function is not a subject. A function is not a subject. There is a superficial similarity, it is true, which is more marked at the lower levels of administrative activity. The difference is most clearly marked at the higher executive and legislative levels. It is the function (clearly) of a legislature to legislate (function: *legislature*). The subjects with which the legislature deals, however, are legion — every 'subject' falling within the jurisdiction of the government concerned and (in our federal system) some which do not.

Although this banal example is far from conclusive proof of a general rule, I believe it will be found that it is more satisfactory to separate the treatment of subjects and functions. Certainly, when functions are treated as units of description to establish relationships they operate more like provenance statements than indexable headings. It should be noted, however, that several of the methodological problems noted below are identical to those of subject indexing.

To what extent function-based units of description substitute for the other two 'traditional' uses (descriptive text and indexing) will be discussed briefly at the end of this article. The activities of most administrative units can be adequately dealt with by using three to five function terms. The subjects of their records will be more numerous. How we guide users (who express their needs in subject terms) to records analysed and described functionally is a problem which will have to be solved once we know what a function is.

Functional indexing of a directory of corporate or government services remains a relatively simple task compared with subject indexing a library of even modest size. There are problems nonetheless.

The taxonomy of functions

The natural sciences have well established methodologies for determining whether specimens belong to the same or different sub-species, species, genus, or phylum. Can the study of functions be similarly methodised?

The first problem we face is that the object of our study is not scientific phenomena operating according to the 'laws' of nature but products of the human mind and processes, pre-eminently the political process. It may be pleasing to reduce human endeavour to the scale of plants and microbes but we are warned against carrying the analogy too

far.[2] On the other hand, we may take comfort from the observation that in nature's complexity, too, unqualified predictive laws can rarely be applied without allowing for numerous exceptions.[3] Any methodology of function analysis must similarly allow for the illogicality, confusion, and obfuscations in human thought and behaviour. Even the documentary evidence of these obscure truths is now debased. Compare the noble clarity of nineteenth century administrative prose with this recent example from which only three identifying phrases (eight words) have been omitted.

> The Department of . . . has the objective of developing as a responsive, responsible, effective and efficient organisation implementing Government policy for maximising long-term economic development for Victoria through . . . in ways that are consistent with sustainable and efficient use of resources and equitably meeting the priority needs of Victorians in . . .[4]

Deriving any useful idea of purpose, let alone discrete function, from this verbal sludge is quite impossible.

Debate continues in biological science over whether organisms really exist in nature as discrete 'packages' called species. Does not the logic of gradual evolution condemn such concepts as fictions without objective existence?[5] Comparative studies of Western and non-Western taxonomies reveal a high correspondence between Linnaean species and non-Western plant and animal names and this gives support (according to Gould) to the view that species are 'real' —

> Higher units of the Linnaean hierarchy cannot be objectively defined, for they are collections of species and have no separate existence in nature . . . They must not be inconsistent with evolutionary genealogy . . . Chimps are our closest relatives by genealogy, but do we belong in the same genus or in different genera within the same family? Species are nature's only objective taxonomic units.

Functions also fall into categories and hierarchies. Any functional expression can be broken down into more specific aspects or drawn together with closely related functions to form a larger 'generic' unit. I think we can identify something very like 'an objective taxonomic unit', which I shall call a primary function, when we identify a function which pertains to the activities of no more than one agency (records creator) at any one time.

Although such primary functions can themselves be broken down or combined to form broader functional representations, it is their exclusive association (at a single point in time) with an actual administrative unit which gives it a 'reality' denied to other functional statements which are constructs. It should be noted, however, that a combination of primary functions (a genus or phylum of functions?) can also correspond (at a higher level of administrative activity) to another unit of administration in such a way that it too is primary. For,

unlike the natural world, administration establishes hierarchical relationships in reality not just in our representation of them. Thus, *state museum* and *state library* are primary functions because each relates uniquely to one agency. The function *arts* comprehends both these functions and on a simple analogy with biology would be an artificial construct — useful but not 'real' in the same way as the primary functions it includes. But in administration it is possible to have a superior agency responsible for the museum and the library whose primary function is *arts* (viz. the Ministry for Arts), not just an aggregation of the primary functions of subordinate agencies.

In any language of function analysis, therefore, there will be a mixture of primary terms at differing levels of specificity. A threshold question for any methodology of function analysis is this: Do we want a unique term (functional unit of description) for each and every primary function? If the Arts Ministry, the museum, and the library are separately described, must we have three terms (*arts, museum*, and *library*) to document them or can we use *arts* to stand for all three? Provided they travel together through time and always stand in the same relationship to each other and to other agencies, there is no reason not to use only one term, but some will prefer the former rule.

It may be, however, that we will want to apply different rules to different categories of agencies. It is the nature of higher level descriptive and administrative units to be exclusive. Fonds, Record Groups, Organisations, Departments of State exist, in part, to establish exclusive jurisdictional boundaries. It makes sense, at these levels, to establish a rule which says 'one function, one descriptive unit' (though one descriptive unit may have several functions, obviously). At lower levels, it is more usual to find several agencies exercising different aspects of one function. Each social security office, for example, is differentiated only by geographic jurisdiction. Geography is a perfectly satisfactory way of differentiating primary functions, but in such instances it may be more useful to cluster such agencies under a common term rather than distinguish each.

The same term, in other words, can operate as a primary function at the higher levels of description and as a secondary function at lower descriptive levels. This permits a history of the function to be documented at the higher levels of description while clusters of agencies (with overlapping date ranges) are shown at lower levels. Inventories of agencies (and possibly inventories of records also?) can then be developed showing a chronological progression at the primary level and an accumulation of data at all other levels.

I do not wish to suggest, by the way, that the 'reality' of primary functions is akin to that of Linnaean species. It is we who decide what to include and what to leave out of a functional description (though we must be guided by reality, the boundaries are ours to determine). The

boundaries of a natural species (though hotly debated) can not be a matter of choice. Many narrow, low-level primary functions have passed back and forth between the complex and broad-ranging *welfare* and *health* functions. We can decide to retain *welfare* and *health* as broad primary functions by excluding only those aspects which have at one time or another passed between them. Alternatively, we can decide to abandon them, treat them merely as reference points (rejected indexable headings for see references) and break them down into component parts. No naturalist enjoys such freedom.

The evolution of functions

Thus we come, appropriately, to the problem of the changing character of functions through time. To be of any practical use in information retrieval, a functional entity must to some degree misrepresent variant forms as correct and unchanging categories.[6] Functions undergo an evolutionary process of change like organisms, yet we must bind the different forms together as discrete entities, otherwise we confuse and baffle understanding.

The instinct for order and clarity drives us to analyse the whole of an administrative history into one unvarying scheme of functional categories. In reality, however, old functions die out and new ones evolve continually. What kind and degree of variation is necessary for us to identify a new function? Who was the last Roman Emperor: Romulus Augustulus (476), Julius Nepos (480), Constantine VI (797), Constantine XI (1453), Francis II (1806), Nicholas II (1917), or Michael 'II' (1917)? What were the middle ages? Such questions confuse precise description but they assist understanding.

When Victoria was still part of New South Wales, the local bigwig was the Superintendent of Port Phillip in whom we can perceive an embryonic executive power which was given formal existence when Superintendent C. J. La Trobe became Victoria's first Governor (styled Lieutenant-Governor) upon separation in 1851. He was both head of state and head of government (an anachronistic distinction for that time). Within five years, however, representative self-government was conferred and the office of Colonial Secretary (hitherto the chief civil servant) assumed the role of head of government under the title Chief Secretary. As our form of government evolved the executive powers of the Chief Secretary (Premier) grew at the expense of a decay in the executive functions of the Governor. Meanwhile, a new distinction evolved between the 'political' functions of the head of government and the 'administrative' functions which devolved upon an Under Secretary which, after the civil service reforms of the 1870s, would be seen as a purely bureaucratic post.

Is it allowable to take the two executive functions (head of state and head of government) back to 1839 when the first Superintendent was

appointed even though real executive power then lay with the Governor of New South Wales and continued there until 1851? To do that misrepresents 'reality'. Yet to do otherwise ignores another kind of reality: the continuity of function represented by the embryonic executive power undoubtedly exercised by La Trobe. A possible solution — to treat Gipps (in Sydney) as head of state and La Trobe (in Melbourne) as head of government — is tempting, but it would even more grossly misrepresent the situation.

In the nineteenth century, *mental health* meant segregating and incarcerating legally defined categories of persons: *lunatics, imbeciles,* and *mental defectives.* Now it means the prevention of *mental illness* and *community based care* for the *mentally ill* and *intellectually disadvantaged (?intellectually challenged).* This change has been gradual but is more substantial than a change in vocabulary and outlook — there has been real alteration to the nature of the function and the manner of its administration.

A real case can be made, despite the transformation in the nature of the activity being described, for treating it as one function. This is because the body of records left behind is a largely homogeneous entity and the administrative units involved were the vehicles for the changes. Indeed, to study the history of the change of function, it is necessary to study the change and development in those administrative units and the records they created.

Compare this with *mining courts* which were established within the *mining* function until they were absorbed by *courts* in 1969. Here the administrative units and their records are intimately and necessarily associated with mining until the function shift when, with almost complete discontinuity, the function goes to another quite different and hitherto unrelated administrative area (the judiciary, in fact). That job of the courts now dealing with inherited mining courts matters is practically identical to and unchanged from the function which first emerged on the troubled nineteenth century mining fields. And yet, to treat it as the same function, except to link it sequentially with what went before, is pointless and (in a significant sense) misleading. The function *mining courts* no longer exists even though it still lives unchanged in *courts*; it is now just part of the seamless web of the *courts* function.

It appears then that, as with the taxonomy of functions, a methodology for dealing with their evolution may derive from the correlation of functional entities with observable facts about the history and development of administrative units and the observable characteristics of the records they leave behind. This, despite the arbitrariness of the process which I have emphasised throughout.

'Well of course,' I hear the mockers cry. 'How obvious.' 'Stripped of the verbiage, all he is saying is what everybody knows — that

functional expressions must correlate to objective reality.' I have neither the space nor (what is more important) the vocabulary and methodological tools (yet) to argue why I think it is an important insight. But I am thus far sure of myself — if you think what I have written in the preceding paragraphs is obvious, I venture to suppose that you have not truly struggled with function analysis.

If man 'descended' from the apes, how come there are still apes around? Not all functional evolution involves the extinction of earlier forms. As in nature,[7] the evolutionary transformation of a function does not preclude the survival of the ancestral function alongside the descendant. The evolution of one branch of a functional 'bush' does not imply the transformation (extinction) of each and every other aspect (branch) of that function. Forestry, for instance, began in the nineteenth century with a concern for husbanding an economic resource for future exploitation but has now evolved to include environmental and conservationist aspects without losing its original industry focus. The 'ancestor' economic function co-exists today with its 'successor' environmental function. In just the same way, the evolution of man does not preclude the survival of apes. To put it more accurately, both the industry and the environment functions (man and the apes) have evolved along a common stem. Some functions, like successful species, evolve by a process of 'branching out' rather than through replacement of one function by another along a 'ladder' of progression.

Finally, one should consider the problems of name change which are for us even more vexing than for the scientists. Species, at any rate, are named by those who study them according to rules of appropriateness, priority, and authority.[8] Functions come with names attached by the politicians and bureaucrats who devised and administered them. Since our audience is historically attuned, we can not blithely assume that 'best known form of name' corresponds to current general usage. Any form of name will be problematic in some respect when applied to any complex or long-lived function. A thesaurus of rejected alternative forms of name must therefore be developed alongside functional entities.

The power of functions

Functions, thus conceived, are a vehicle for expressing relationships between descriptions of context, provenance and records. In large part, I suggest, they can do the tasks traditionally assigned to descriptive text and indexing. This is not to say that traditional description and indexing can be dispensed with. It does suggest, however, that the traditional order may be turned upside down. Instead of functions being characteristics of **things** (context, provenance, and records

descriptions), information about records and agencies can be presented as the description (characteristics) of a function — see Figure 3.

Functional units of description have a substance and a stability (even a change of name does not necessarily require a change of identity) which mere indexable headings do not. With stability comes inflexibility, however, in dealing with variant language and alternative terms. The development of a cross-reference structure (an index to the functional units of description) is indispensable.

That said, functional units of description turn out to be as powerful (frequently more powerful) retrieval tools as provenance.[9] We all know that the approach through provenance is not the preferred path for most researchers. Functional approaches are much more like the subject retrieval so many prefer, which we (for reasons they will never understand) can not give them.

In very complex administrative structures, it is necessary when composing the descriptive text to follow one of two equally unsatisfactory paths. Either the function analysis must be broken up under each of the units of administration being described or (what is more likely) large repetitive slabs of text must appear in different parts of the database.

It is a liberating experience for anyone who has struggled with these problems to substitute functional analysis for descriptive text. The first thing one notices is this: that records align much more easily and simply under functions than under provenance or subject. The records of mental health have passed, over a century, through myriad administrative restructurings, amalgamations, and divisions. The relatively homogeneous body of records, which is what researchers want to get at, is easy to identify. Describing those records functionally smooths the user's path and shortens the route.

Conclusion

This article offers the barest and most primitive outline of a methodology for dealing with functional analysis of records which I believe may hold promise for improving descriptive practice and enhancing finding aids. There are many loose threads and probably a few dead ends in what I have written. I trust, however, that others will take up the challenge to explore these possibilities further; as I shall.

Aboriginal affairs

VRG Function No.: GpF0175

VA Function No.: AgF0149

History (Groups):

to 1839: Police Magistrate VRG 7
1839-1851: Superintendent VRG 11
1851-1855: Colonial Secretary VRG 16
1855-1856: Chief Secretary VRG 26
1856-1860: Lands VRG 18
1860-1967: Chief Secretary VRG 26
1967-1975: Aboriginal Affairs VRG 58
1975- : Not Otherwise Classified — Commonwealth VRG 87
1975-1985: Premier VRG 50
1985-1990: Planning & Environment VRG 78
1990- : Planning & Urban Growth VRG 95

History (Agencies:)

-1968: Chief Secretary's Dept VA 475
1968-1975: Min. for Aboriginal Affairs VA 2873
1975-1982: Dept of the Premier VA 2717
1982-1985: Dept of Premier & Cabinet VA 1039
1985- : Min. for Planning & Environment VA 1024

History (Other Agencies):

1839-1849: Chief Protector of Aborigines (1839-1849) **VA 512**
1849-1860: Guardian of Aborigines (1849-1860) **VA 613**
1860-1869: Central Board for the Protection of Aborigines (1860-1869) **VA 514**
1869-1957: Board for the Protection of Aborigines (1869-1957) **VA 515**
1957-1968: Aborigines Welfare Board (1957-1968) **(unregistered)**

Use for: administration of Aboriginal affairs generally up to 1975 and thereafter (following the transfer of the function to the Commonwealth by referendum in 1975) for state policy co-ordination of Aboriginal affairs.

Do not use for: administration of the following functions having specific application to Aborigines:
★ education;
★ public health;
★ public housing;
★ police (including native police);
★ welfare services.

Description:

Included in the civil instructions issued to the first Police Magistrate for the Port Phillip District, Captain William Lonsdale, required him to:

> protect the Aboriginal natives of the District from any manner of wrong, and to endeavour to conciliate them by kind treatment and presents . . . and to improve by all practicable means their moral and social condition.
>
> *Historical Records of Victoria*, Volume 1, pp. 49-54

He was to investigate earlier violence and killings. As settlement encroached further into tribal etc., etc., etc.

Inventory of Series:

VPRS 4409	Chief Protector	Copies of Correspondence relating to the Establishment of the Protectorate	1838-1839	1 box
VPRS 10	Chief Protector	Registered Inward Correspondence	1839-1851	11 boxes
		. . . . .		
VPRS 1694	Central Board	Correspondence Files etc., etc., etc.	1889-1946	21 boxes

Figure 3

ENDNOTES[10]

1. Stephen Jay Gould, *Hen's Teeth and Horse's Toes: Further Reflections in Natural History,* Penguin, 1990; Ch. 28, 'What, If Anything, is a Zebra?'
2. Stephen Jay Gould, *Bully for Brontosaurus: Reflections in Natural History,* Norton, New York, 1991; Ch. 4, 'The Panda's Thumb of Technology'.
3. Stephen Jay Gould, *Eight Little Piggies: Reflections in Natural History,* Jonathan Cape, London, 1993; Ch. 31, 'A Foot Soldier for Evolution'.
4. *Victorian Government Directory,* June 1989, p. 78. The department, in case you could not guess, was Agriculture.
5. Stephen Jay Gould, *The Panda's Thumb: More Reflections in Natural History,* Penguin, 1990; Ch. 20, 'A Quahog is a Quahog'.
6. Stephen Jay Gould, *The Flamingo's Smile: Reflections in Natural History,* Penguin, 1985; Ch. 10, 'Of Wasps and WASPS'.
7. *Eight Little Piggies . . .'.* Ch. 7, 'Full of Hot Air' and Ch. 20, 'The Declining Empire of the Apes'.
8. *Bully for Brontosaurus . . .'.* Ch. 5, 'Bully for Brontosaurus'.
9. This is not to say that function analysis replaces provenance. Apart from anything else, accurate analysis of provenance and administrative history is an indispensable pre-requisite for satisfactory function analysis.
10. And now, here is a footnote to the endnotes. Some readers (perhaps most) may think it eccentric of me to quote so extensively from a writer in the field of natural history — even a 'popular' one. This comment is not addressed to them, but to other fans of Professor Gould. They will be aware of his strictures against analogies between biological evolution and human cultural change ('all modes of change must hold features in common; but the mechanisms of biological evolution and cultural change are so different that close analogies usually confuse far more than they enlighten' — *Eight Little Piggies* Ch. 16, 'Counters and Cable Cars' — no, I'm not going to footnote the footnote to the endnote). I take this as a warning primarily against the fallacy of argument by analogy, which I trust I have avoided. In discussing new and possibly unfamiliar ideas in my own field, my need for parables overcame my sense of the dangers. In any case, I hope readers will find the parallels which I have dared to draw instructive and, if not, at least, amusing.