# What's New? Functional Analysis in Life Cycle and Continuum Environments

*Danielle Wickman*

**Danielle Wickman** is currently employed as a Senior Project Officer with the Collection Review project at the National Archives of Australia. Since joining the Archives in 1994 she has been involved in a wide variety of areas and projects, including intellectual control, public programs, the review of the Archives' web site, recordkeeping and metadata standards and the Archives' Advisory Council. Prior to joining the Archives, Danielle worked at the Australian Defence Force Academy Library. She has a Bachelor of Arts in Communication and Journalism and a Graduate Diploma in Library and Information Management from the University of Canberra, and is currently studying at Monash University for a Master of Information Management (Archives and Records).

*This paper explores the place of functional analysis in archival tradition in both the life cycle and records continuum models. It contrasts the place of functional analysis in the work of more traditional life-cycle theorists such as Schellenberg with the approach taken in Australia, particularly in more recent times. This paper was originally presented as an assignment for the Business Records Management unit of the Master of Information Management (Archives and Records) course at Monash University.*

Much has been written in the recordkeeping professions in Australia about the records continuum model.[1] Continuum thinkers contend that the life cycle model has failed us, that it is inadequate in an increasingly fast-paced electronic working environment. The continuum model, they argue, is a more complete and workable explanation, not only of our current practice, but of the nature of recordkeeping as it has always been. The tools we develop to do our work are becoming inseparable from the records

continuum model - the design and implementation of recordkeeping systems methodology (DIRKS),[2] distributed organisational recordkeeping, the Australian Standard on records management, functional analysis.

However, functional analysis is not such a different activity from our previous explorations of functions. It is perhaps not the analysis, but the uses to which we put it that have changed in the continuum model.

The life cycle model is reliant on a number of premises that have been criticised on a number of grounds. The life cycle is felt to be too heavily based on paper recordkeeping practices, concerned with records as physical objects, preoccupied with custodial issues, and distinguishing falsely between 'records' and 'archives' according to currency and research values.[3] The life cycle has been explained in a number of different ways, but essentially canvasses sequential stages split into two phases. The first, 'current' phase includes creation or receipt of records, classification into some logical system, maintenance and use, and disposal through destruction or archiving. The second, 'archival' phase covers selection or acquisition by the archives, description in finding aids, preservation, and secondary or research use.[4] Further elements often included in the life cycle model refer to storage location, with secondary storage occurring some time between primary storage, associated with use in the office in the first phase, and tertiary or archival storage in the second phase.

The continuum model focuses on the record's relationship with the transactions that produce it, arguing that records move through dimensions of creation, capture, organisation and pluralisation according to the transactions they participate in and the purposes they are used for. A record can exist in any or all of the above dimensions at one time. The model focuses not on the records themselves, but on their behaviour and relationships in certain environments. Continuum advocates argue that this focus on the nature of the records rather than their physical existence allows records professionals to remove themselves from traditional practices. Physical form and custody become irrelevant factors in determining the qualities the records possess. By freeing records professionals from concerns about physical form, custody and processing, traditional archival and records management tasks can be merged or rearranged according to individual or organisational needs. Records are still created, received, classified, used, and disposed of through destruction or archiving, but these tasks can now happen in almost any sequence.

This is perhaps the key difference between the continuum and the life cycle. In the life cycle, records processes take place in a given sequence, and

are carried out by a particular professional group. In the continuum, records processes still occur, but they can happen at any point in the record's existence, or indeed precede it, and might be carried out by any of the record professions. The continuum changes less *what* happens than *how* and *when* it happens.

*How* may be the greatest difference. Continuum thinking has not only spawned new tools for implementation and management of recordkeeping systems, it has also found new uses for old tools. Functional analysis is not a new concept for records managers; rather, it is now being used in new and different ways.

## Schellenberg et al on Functions

It should hardly be surprising that analysis of functions has long been of importance to archivists. Schellenberg defined records as materials made or received by an organisation

> in pursuance of its legal obligations or in connection with the transaction of its proper business ... [and] preserved as evidence of its functions.[5]

The Australian archival bible, *Keeping Archives,* defines records as

> Documents...created or received...in the *transaction* of business...and subsequently kept as evidence of such activity.[6]

We have always associated records with the transactions, activities and functions of individuals and organisations, and it follows that we should analyse these transactions, activities and functions in order to understand more about the records that are their products.

Functions and activities have always been the stuff of archives and a pre-occupation of archivists. In the new model, they are now becoming not only an entity to be described, but also a tool with which to do our work. Functional analysis has become explicit, rather than implicit, in our work. The Australian Standard for Records Management advocates an analysis of business activity, or functional analysis, in the design of recordkeeping systems and business classification schemes (thesauri) and in appraisal.[7] The production of the Australian Standard articulates the importance of a knowledge of functions not only as a broad skill or ambient understanding to be brought to the work, but rather as a stringent, systematic and necessary process through which authoritative records are created and maintained.

In 1956 TR Schellenberg, writing of records classification, discussed functions, activities and transactions.[8] He wrote that 'public records, as a rule, should

be classified in relation to function'.[9] He goes on to give various guidelines on 'developing a classification scheme based on an analysis of functions, activities and transactions'.[10] For example, Schellenberg quotes the findings of a 1954 Australian Archives Management Seminar on the registry: '[it] should be planned in relation to the functions and activities of the department'.[11] In a discussion on physical filing sequences he advocates 'breaking files into sections on a functional basis'.[12] He refers to functions and their analysis in reference to description,[13] records scheduling,[14] and archival description.[15]

Heather MacNeil argued in 1994 that:

> We have always known, for example, that to properly appraise and describe archival documents...we must first understand...the activities that generated the documents.[16]

*Keeping Archives,* however, discussed functional analysis, as an appraisal tool, as a new concept beginning to be explored by archivists.[17] An appreciation of the importance of functions to recordkeeping is not the same as the specific tool or process we have come to know as functional analysis.

## Structure v Function

Schellenberg, while maintaining that records should be classified according to function, nevertheless tied function closely to the business structures of organisations. Structure and function became almost synonymous in archival language, particularly for archival description, so that an analysis and description of the structure of organisations became the main focus of archival work. Witness the development of the Commonwealth Record Series system, which was put in place to manage the ever-changing structure of the Commonwealth government. The CRS system built the record series using the structural elements of organisation and agency. Functions were a later addition, and at times seen more as a 'subject' searching tool for researchers than as a method of intellectual control of the records. Functions were not described in detail (as agencies and organisations were) and form merely a thin thread running through the various agency descriptions. Agency descriptions are directly attached to functions in the CRS system, but series are not. The functional relationship of series in the CRS system is made through the series link to the agency, once again emphasising structure rather than their function.

Functions have historically been so closely tied to business organisations and structures that there has been little perceived need for archivists to

separate them, and archivists have used studies of organisational structures to determine the functions of a given office. Schellenberg himself points out that 'organization...frequently corresponds to function'.[18] Structural analysis has been a substitute for functional analysis, and has been used to document provenance as a contextual element of records.[19]

The Australian Records Management Standard codifies the process of functional or business activity analysis. It recommends that an analysis of business functions and activities should focus on

> (a) the goals and strategies of the organization;
>
> (b) the broad functions of the organization which supports the pursuit of these goals and strategies;
>
> (c) the activities of the organization which constitutes the functions; and
>
> (d) the groups of recurring transactions which constitute each activity.[20]

in order to create a hierarchical business classification. The standard continually emphasises that, while the organisational units responsible for functions and activities need to be identified, it is not the units but the purposes for which they are established that are being classified. Forty years earlier Schellenberg also proposed a hierarchy of functions, activities and transactions for classifying records, defining functions as:

> all the responsibilities assigned to an agency to accomplish the broad purposes for which it was established.[21]

The idea of functional analysis, then, is not new. Nor is its use in classifying business activities for use in the intellectual and physical control of records. Functional analysis has been submerged in the idea that structure follows function, and that an examination of the structure of an organisation will reveal the functions it was established to carry out.

## A Life-Cycle Tool?

The records continuum model argues that the life-cycle produces a disjointed view of the purposes and processes involved in records and archives management. The life cycle model places recordkeeping processes in categories according to the uses for which they were developed, and prevents us from seeing the commonalities in processes and finding new uses for existing tools. The connectedness of processes becomes apparent in a continuum model. Records classification has to do with retrieval and physical management. Appraisal has to do with destruction or disposal of otherwise unwanted records. Archival description has to do with producing

finding aids and assisting research on archival records. By proposing these connections, the continuum model allows us to see many uses for our traditional tools. We are able to kill many birds with the one stone of business or functional analysis.

Traditionally, classification has had more to do with retrieval and filing of physical records than with appraisal, archival description, access management or documenting context. It was associated with anticipation of the kinds of records that would be created in the system. Functional analysis was, and is, an important part of classification. The more closely aligned approved titles are to the business the organisation conducts, the greater the chance of the file titles accurately reflecting their contents. Retrieval is simpler when there is a known set of keywords available with which to search, and when the terms are familiar ones that have relevance for the organisation's business. Schellenberg recommended a classification system based on functions, with the function being scalable to avoid having subjects creep into the classification system. For example,

> if a transaction relates to a class of persons, the class rather than the persons becomes the basis of grouping records into file units.[22]

Catherine Robinson observes, nevertheless, that

> the classification scheme was generally based on broad subject areas and was not closely related to the business functions and activities of the organisation.[23]

In the Australian environment at least, the production of records disposal schedules or authorities also relies heavily on functional analysis. The then Australian Archives advised Commonwealth agencies carrying out appraisal projects to first research

> the services or functions [the] organisation is and has been responsible for, which parts of the organisation carried out what functions, and what records document those activities.[24]

Staff are directed to find information in

> annual reports, organisational functional statements, official histories, relevant legislation, administrative arrangements orders and registration information from the Australian Archives.[25]

Appraisal projects in the National Archives and elsewhere have generally focussed on identifying the activities documented in a specific group of records, and assigning values to the records according to the importance of these activities and other external factors. The set of values normally ascribed to records - administrative, financial or accounting, legal, research

and display - relate more to the uses the records might be put to than the value, importance or 'representativeness' of the functions and activities they document. Disposal schedules are generally organised by activity (a sensible arrangement, since this is how the records are created, classified and used) yet the values ascribed to them are based on an analysis of the records themselves, not on the activities they represent.

Terry Cook finds this placing of functional analysis on the periphery of appraisal puzzling. He proposes an appraisal model that

> would not be the search for research value per se, but rather the articulation of the most important societal structures, functions, records creators, and records creating processes, and their interaction, which together form a comprehensive reflection of human experience.[26]

He argues that archivists have taken a codification of the 'values-through-use' of a group of records and elevated it to the status of universal values of records. In a view immediately recognisable as fitting a continuum perspective, he advocates appraising not the actual records themselves but the functions they embody.

In applying functional analysis to the reappraisal of a set of records at the Archives of Ontario, Jim Suderman mused that

> [a]rchivists have probably always utilised the functional context as well as the provenancial and record contexts for appraisal. This conclusion seems unavoidable when one considers that function is indicated as a defining element of a series. What may be new is the emergence of a consistent structure or system for a practical analysis of functions fulfilled by more than one creator or that encompass more than one series.[27]

These approaches, however, still focus on appraisal as an end-of-life-cycle event, existing for the purposes of selecting for preservation important and representative records reflecting the functions or purpose of their creator. The appraisal of functions in Suderman's discussion has no impact on how the function is documented in the 'active' phase of the life cycle, but is used to determine the value of a found set of records. It determines how the function was carried out, but makes no comment on how it *should* be carried out.

In relatively recent times archivists, records managers, and even records management software vendors, have suggested using disposal schedule classes in thesauri and classification schemes, to aid sentencing of records on creation and their appropriate management according to their likely disposal fate. Records would be created within a classification system based on a preexisitng analysis of the activities the organisation carries out and

the relative values attached to each. Preexisting appraisal decisions would then have an impact on how records are managed throughout their 'active' lives, so that the appraisal process becomes not only part of disposal, but also of classification and use. Archival theory has always dictated that appraisal should take place as early in the life cycle as possible, preferably at creation, but in practice this has rarely been the case.[28] The State Records Authority of New South Wales is formalising the relationship between appraisal and classification within its jurisdiction by taking the step of linking business classification (in the form of the *Keyword AAA* thesaurus) inextricably with appraisal and disposal scheduling.[29] The National Archives of Australia is also embarking on a similar process.

The State Records Authority, and other archives with large jurisdictions, are, of course, operating under the handicap of having little control over how the records whose disposal they authorise are created. The State Records General Disposal Schedules, and the National Archives of Australia General and Records Disposal Authorities, are formulated at one remove from the creation of records. A continuum perspective, one reflected in the Australian Records Management Standard, advocates functional analysis to appraise not only when records can be destroyed, but also when and to what specifications they should be created.

Life cycle perspectives have not traditionally touched on the ways in which creation of records can be controlled. The life cycle begins with the creation of the record, reflecting the traditional view that records managers and archivists have no business in directing what records an organisation creates, but rather are relegated to receiving the physical objects once created. This is one of the anomalies of the life cycle model. It places great emphasis on the importance of records processes, for instance, classification, but does not really explain the relationship records processes have with business processes. Records are classified in the creation and use phase of the life cycle, but when is the classification system created? It must predate the creation of records for them to be created 'properly', but it relies on an analysis of records already in existence to be created itself. It is difficult, then, to fit appraisal for records creation into a life cycle model. Rather, like the development of business classifications, it seems to fall outside the model, as something external to the records manager.

## A Continuum Tool?

This disjunction between records creation and the records manager, although implied in the life cycle model, has long been seen as problematic.

Schellenberg, for example, advocated the records manager's intervention in records creation. He recommended that records officers, office managers and top level administrators work together to reduce the amount of records being created by simplifying functions, work processes and record procedures. In a statement that could be read as a 'how-to' of business process re-engineering, he wrote:

> The problem then is one of analysing the steps involved in a particular administrative operation for the purpose of improving procedures and simplifying methods. Each step should contribute positively to the accomplishment of a particular operation; and each step in the administrative sequence should be analysed. ...[This] work, if it is successful, automatically reduces the production of records; for records are only a byproduct of administrative activity; their creation is not an end in itself.[30]

What Schellenberg does not say, but perhaps implies, is that records managers can supply a perspective not only on which records it is unnecessary to create, but also which records *must* be created to satisfy evidential requirements, and to what standards these should be created.

The continuum model acknowledges that records may be created outside the registry environment before they are captured and organised into a recordkeeping system, and that the records manager may play a role in their creation. Taking an interventionist, continuum view, the Australian Records Management Standard follows this model in analysing functions for appraisal purposes to determine which records should be captured into a recordkeeping system.[31] Appraisal becomes not an examination of found objects using external values, but an examination of business processes for evidential and accountability requirements. The records created by a system designed around the appraisal of business functions are, as Jean Marie Deken puts it, 'born appraised'.[32]

David Bearman said in 1994 that

> [w]e keep records in our society because we have business reasons for keeping records. Those business reasons come down to two kinds of risks: liabilities and opportunities. Records management is risk management for an organisation.[33]

Records managers have traditionally managed risks by preserving the physical record object, after it has been created by action officers. In Australian registry environments, records are often registered or captured into the recordkeeping system by action officers purely due to a vague sense that an activity *should* be documented, rather than any deliberate or considered assessment of the risks involved in *not* documenting the activity. Action officers raise files because they sense a risk to the organisation in not remembering how a transaction was carried out.

The field of risk management has become much more reasoned and scientific than such a process would suggest. As the process of risk management becomes codified, it is becoming possible for records managers to extrapolate their existing expertise in limiting the risk of not keeping records, to the cause of limiting the risks of not creating or capturing records.

Glenda Acland reminds us the '[t]he pivot of archival science is evidence not information'.[34] While not directly addressing the issue of records managers' intervention in records creation, she hints that part of the accountability and risk management role of records professionals lies in ensuring correct records are created and captured:

> [w]hile archivists have a duty of care to the records in their custody, there also exists a duty of care to ensure that adequate records *exist* and are properly maintained and managed.[35]

The inference is that while archivists have a duty to preserve evidence once it is created, they also have an opportunity, and perhaps even a duty to their organisations, to ensure that appropriate evidence is in fact created in the first place.

Such a view has arisen in response to the rise of electronic records. The now established view is that, unless archivists intervene and advise in the creation of recordkeeping systems, all appropriate records will not be adequately captured into them. The Pittsburgh Project's functional requirements for evidence in recordkeeping include the principle that recordkeeping sytems must be comprehensive - that records must be created for all business transactions.[36] Yet other closely related models, such as Bearman's Business Acceptable Communications model,[37] suggest that assessments can be made according to risk analysis on what records to capture, and to what standards. Records of all transactions must be created, but records managers can assess the risks the business faces and determine that not all records need to be captured in the recordkeeping system.

The metadata set proposed by Bearman to ensure that records contain the required content, context and structure to act as evidence of transactions consists of a number of mandatory and non-mandatory elements.

> The metadata content directly related to satisfying requirements for evidence is mandatory ...The metadata content which contributes to recordkeeping, or management of records, but is not essential to evidence, is optional.[38]

Most retention and business function metadata, for example, are optional. Organisations may assess the risk of not classifying their records by business

function and decide that the risks to easy searching and retrieval of records are less than the costs of creating a classification system. Organisations may decide that for particular functions it is important to keep metadata on the retention period and authorisation of disposal of records. Others may find the costs of generating and storing such metadata is greater than the risk of not keeping this information.

The Australian Records Management Standard recommends these risks be assessed on the basis of a functional analysis:

> [d]eciding not to require formal records capture in a business activity is based on the assessment of the risk arising from having incomplete records of that activity.[39]

This is a new use for the archivist's traditional examination of functions and activities. It requires an analysis of functions for which records may never exist. While Schellenberg says that the volume of records might be reduced by reducing the number of transactions generating them, he may not have contemplated a decision *not* to capture and control records once created.

## A Recordkeeping Tool

An analysis of business functions has always informed the work of archivists and records managers. It helps to inform our definitions of what a record is, and has given us guidelines on how to manage the records that come into our care. Analysis of functions and activities is not a new way of identifying records of value to the broader community. However, it has allowed us to step beyond what others think is important and to find a stronger voice for accountability by articulating what essential evidence organisations need to account for their activities to themselves and to the community at large. The rearticulation and codification of functional analysis has allowed recordkeeping professionals to identify more closely with their mission - to encourage accountability and to ensure not only the maintenance but also the creation of evidence of the purposes and functions of organisations.

## Endnotes

1. See, for example, Frank Upward, 'In Search of the Continuum: Ian Maclean's 'Australian Experience' Essays on Recordkeeping' in Sue McKemmish and Michael Piggot (eds) *The Records Continuum: Ian Maclean and Australian Archives First Fifty Years,* Ancora Press in association with Australian Archives, Clayton, Victoria, 1994, and Sue McKemmish, 'Yesterday, Today and Tomorrow: A Continuum of Responsibility' in *Preserving Yesterday, Managing Today,*

*Challenging Tomorrow: Proceedings of the 14th National Convention of the Records Management Association of Australia, 14 - 17 September 1997,* Records Management Association of Australia, Perth, 1997. McKemmish and Upward are essentially the authors of the records continuum model. For another perspective, see for example Laurie Sletten, 'Records Management in Australia and the United States: Appreciating the Differences', *Informaa Quarterly,* vol. 15 (1) February 1999, pp. 15-20, and the resulting discussion 'Life-cycle = continuum' on the aus-archivists listserv in February 1999, available at http://www.asap.unimelb.edu.au/asa/aus-archivists/threads.html [accessed 2 March 1999].

2. The DIRKS methodology is outlined in Standards Association of Australia, Australian Standard: Records Management (AS4390-1996), Part 3 6.2.2.

3. Sue McKemmish et al, LAR 5530 Managing the Records Continuum Subject Book 2, Monash University, 1997, p. 7.

4. Jay Atherton, 'From Life Cycle to Continuum: Some Thoughts on the Records Management - Archives Relationship', in Tom Nesmith (ed), *Canadian Archival Studies and the Rediscovery of Provenance,* SAA and ACA in association with Scarecrow Press, Metuchen, NJ, 1993, p. 393.

5. TR Schellenberg, *Modern Archives: Principles and Techniques,* FW Cheshire, Melbourne, 1956, p. 16.

6. Judith Ellis (ed), *Keeping Archives,* 2nd edition, Thorpe in association with the Australian Society of Archivists Inc, 1993, p. 477.

7. Standards Association of Australia, Australian Standard: Records Management (AS4390-1996), Part 3 6.2.2, Part 4 7.2 and Part 5 6 2.2.

8. TR Schellenberg, op. cit., pp. 53-55.

9. ibid., p. 62.

10. ibid., p. 63.

11. ibid., p. 77.

12. ibid., p. 92.

13. ibid., p. 95.

14. ibid., p. 102.

15. ibid., p. 118.

16. Heather MacNeil, "Archival theory and practice: between two paradigms", *Archivaria,* no. 37, Spring 1994, p. 9.

17. Judith Ellis, op. cit., pp. 193-94 and pp. 195-98.

18. TR Schellenberg, op. cit., p. 55.

19. H Samuels, *Varsity Letters,* Scarecrow Press/SAA, New Jersey, 1992, p. 5.

20. Standards Association of Australia, op. cit., Part 5 6.2.2.

21. TR Schellenberg, op. cit., p. 53.

22. TR Schellenberg, op. cit., p. 57.

23. Catherine Robinson, Records Control and Disposal using Functional Analysis, paper presented at the 1997 ASA Conference, available at http://www.records.nsw.gov.au/rk/classification/record~1.htm [accessed 19 May 1998].

24. Australian Archives, *Australian Archives Handbook,* Australian Archives, Canberra, 1996, p. 50.

25. ibid.

26. Terry Cook, 'Mind Over Matter: Towards a New Theory of Archival Appraisal' in Barbara Craig (ed), *The Archival Imagination: Essays in Honour of Hugh A Taylor and Barbara Craig,* Association of Canadian Archivists, Ontario, 1992, p. 41.

27. Jim Suderman, 'Appraising Records of the Expenditure Management Function: An Exercise in Functional Analysis', *Archivaria,* no. 43, Spring 1997, pp. 138-39.

28. Jean Marie Deken, 'Writ on Water? An Exploration of the gap between archival construct and practice in the machine-readable environment'. Paper presented at the Working With Knowledge conference, Canberra, Australia, 6-7 May, 1998, available at http://www.slac.stanford.edu/%7Ejmdeken/stama598.html, accessed on 28 May 1998.

29. Catherine Robinson, op. cit.

30. TR Schellenberg, op. cit., pp. 45-46.

31. Standards Association of Australia, op. cit., Part 5 6.3.

32. Jean Marie Deken, op. cit.

33. David Bearman, 'Archival Issues in a Computing Environment' in S. Yorke (ed), *Playing for Keeps,* Australian Archives, Canberra, 1995, p. 234.

34. Glenda Acland, 'Managing the Record Rather than the Relic', *Archives and Manuscripts,* vol. 20, no. 1, May 1992, p. 58.

35. ibid., p. 59. Emphasis added.

36. Functional Requirements for Evidence in Recordkeeping, http://www.lis.pitt.edu/~nhprc/prog1.html, accessed 18 May 1998.

37. David Bearman, Toward a Reference Model for Business Acceptable Communications, December 6, 1994, at http://www.lis.pitt.edu/%7Enhprc/prog6-5.html, accessed on 20 October 1997.

38. ibid.

39. Standards Association of Australia, op. cit., Part 5 6.3.