

RELATIONSHIPS IN RECORDS¹

Chris Hurley

Contents :

0.01-0.03	Preamble
1.01-1.11	What, If Anything, Is a Relationship?
2.01-2.18	How Do I Own Thee? Let Me Count the Ways
3.01-3.19	Taxonomies & Filling the Spaces in Between
4.01-4.26	Electronic Series – Rediscovering the Mystery (or, Describing the Unicorn)
5.01-5.17	Sequencing or Serialisation
6.01-6.21	Everything is an Episode in the Life of Something Else
7.01-7.26	Are Relationships Ever Actual?
R0.01-R0.04	Retrospective : Preamble
R1.01-R1.16	Retrospective : The Road Map
R2.01-R2.10	Retrospective : The Detours
R3.01	Retrospective : Conclusion

0.01 The two most important characteristics of all relationships in records are to be found in answers to the questions : “how related?” and “when related?”. Customarily, when considering how recordkeeping entities are related, three types of relationship are identified :

- (a) ownership (owns/owned by)
- (b) succession (succeeds/precedes)
- (c) interaction (otherwise related).

This piece looks at types (a) and (b). Interaction involves great diversity, a consideration of which would overly complicate what is not a simple matter to begin with. Perhaps we have just been too lazy to crystalise our thinking about the kinds of relationships haphazardly gathered together as interaction

0.02 When dating relationships, it is customary to use different dating methods for each relationship type :

- (a) for ownership relationships, a date range is appropriate (even if the relationship subsisted only for a single day)
- (b) for succession relationships, a single date is appropriate (even if the relationship was formed across an interval of time).

This goes to the definitional difference between the two relationship types.

0.03 At its crudest, a relationship will be a statement of simple ownership or succession. We call these relationship types, however, because, in systems of any sophistication or complexity, ownership and succession can express many subtly different ways in which entities can relate to each other and these different ways can be documented as different relationships (albeit of the same relationship type).

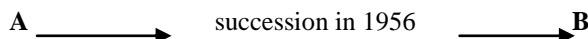
1.0 WHAT, IF ANYTHING, IS A RELATIONSHIP?

1.01 The two relationship types identified above are not mutually exclusive possibilities. Rather, they are two different ways of looking at the same thing – hence the significance of dating method as a definitional characteristic of each.

¹ This work (now slightly revised) appeared sequentially in the *New Zealand Archivist* as follows : Summer 2001 (Part 1), Winter 2002 (Part 2), Spring 2002 (Part 3), Summer 2002 (Part 4), Autumn 2003 (Part 5), Autumn 2004 (Part 6), Winter 2004 (Part 7), December/Summer 2004 (Retrospect). It is formatted (with paragraph numbering) for publication in full on the Internet.

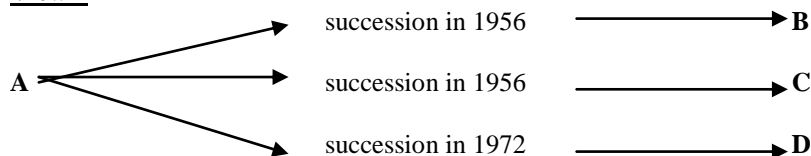
1.02 Consider a simple succession between two agencies :

View 1



We know that succession between agencies can be complicated and that simple succession may be only one facet of what is actually a “calving” of functions from an agency to manifold successors, thus :

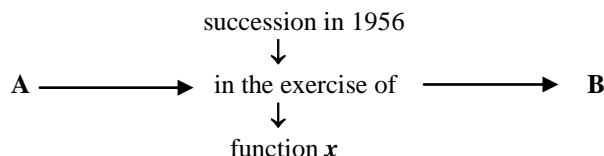
View 2



1.03 The problem this creates is that there is no differentiation in View 2 between three different succession statements. Where there is multiple succession, it is necessary to introduce some means of differentiation. Otherwise, we are compelled to make the same statement about two or more entities in their relationships with **A** – viz. **B** succeeds **A** and so do **C** & **D** - and this cannot be right. If the system has to differentiate between successors in this way in order to deal with multiple succession, then the same methodology should apply to simple succession (View 1) even if it is not strictly necessary in such cases.

1.04 One way to differentiate multiple succession relationships between agencies will be to specify the function, in respect of which the succession occurs. This produces another view of the data which some have termed a three-way-relationship

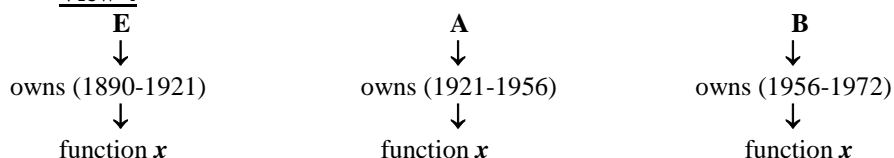
View 3



If function **x** passes between **A** and **B** in 1956, it clearly cannot pass between **A** and **C** in 1956 or between **A** and **D** in 1972. If you think it can (that **x** can pass simultaneously to **B** and **C**), you have simply documented **x** wrongly and you need to redefine it into **y** and **z**. Whatever is happening in those other two successions can be described differently in terms of the function or functions that are passing.

1.05 While it may be possible for system builders to cope with this functional requirement, it is not necessary for us to trouble them to do so. The succession relationship documented in View 3 can be more simply expressed as a number of ownership relationships :

View 4



1.06 It is in View 4 that we first notice that the specification of the nature of the relationship (how related) can, and indeed must, itself be dated. This tells us something very important – something which delineates our data from most of the other data with which information systems must deal. Not only do the entities or objects have date characteristics, so too do the relationships between them. This is to say more than we deal with a variety of

relationship types. As with other archival data, the characteristics of relationship entity/objects are contingent, not logical. They have a particularity derived from circumstance, apart from what can be logically deduced from their definition. This statement can be expressed yet more simply as :

View 5

function **x** is owned by :
 ---: **E** (1890-1921)
 ---: **A** (1921-1956)
 ---: **B** (1956-1972)

In our world, relationships are entities (or objects).

1.07 By capturing a succession relationship as an ownership relationship, therefore, it is possible to make a three-way-relationship statement about succession as an output rather than as an input of the system :

View 6

A was responsible for exercise of
 ---: function **x** (1921-1956) passing From : **E** To : **B**

It will be seen that View 6 is identical to View 1. Both express the idea that **B** succeeds **A**, but View 6 is more explicit about what that succession involves – it says how related more precisely as well as when related. If we capture data in View 5 into a system capable of rendering it as View 6, it becomes unnecessary to capture it as View 1. In other words, capturing ownership relationships between functions and agencies in a way which can be rendered as a succession relationship between agencies makes the capture of succession relationships between agencies unnecessary if (an important if) the only thing we want to say about agency succession can be embodied statements about functional responsibility.

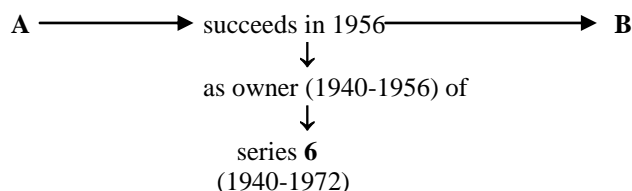
1.08 That, of course, is not the case. Another important way of understanding the succession of agencies is the connection they have with recordkeeping. Thus, if a single series is created, in succession, by two agencies their co-ownership over time creates another kind of succession relationship :

View 7

A was responsible for exercise of
 ---: series **5** (1890-1940) passing From : **E** in 1921
 ---: series **6** (1940-1972) passing To : **B** in 1956

1.09 In View 8, we are in fact making both ownership and succession statements; the succession statement being :

View 8



It will be seen then that a succession view of a relationship can be treated, in the alternative, as an ownership view – and vice versa. Both views can be rendered, but only one has to be captured.

1.10 In determining which it should be that is captured, it will be noted that succession relationships are ordinarily limited to relationships between like entities. Ownership relationships, on the other hand can be between both like and unlike entities. A succession

relationship is, in effect, a particular instance of a succession of ownership relationships – which is why it must have a single date and not a date range. Date changes are characteristics of an ownership relationship subsisting in time, whereas a succession relationship merely documents an alteration in an ownership relationship occurring at one point in the succession of instances during which that ownership relationship subsists.

1.11 This view – that the succession relationship merely documents an instance of an ownership relationship – may seem to be a difficulty for those of us who hold that the sequencing of records is a primary distinguishing feature between records and other kinds of information (viz. that the organisation of documents on a file or docket, the systematic arrangement of entries in a register or index, make a record what it is, beyond its provenance or context). As will be demonstrated below, however, even the sequencing of documents and records – critical though that (original order) is in addition to contextual knowledge (provenance) – can be understood as an instance of ownership.

2.0 HOW DO I OWN THEE? LET ME COUNT THE WAYS

2.01 In Part 1, it was hypothesised that succession relationships are actually ownership relationships in disguise. In order to apply this theory, it will be necessary to define ownership in much more precise ways than we have been accustomed to doing.

2.02 The need for this, in any case, is apparent in the emerging functionality of records management software. We are accustomed, in traditional recordkeeping theory, to express provenance in simple statements about records-creation. In fact, such statements obscure a complex network of relationships between records and their creators. In records management software, the relationships between records and actors within an agency are defined as permissions : create, see, open, edit, delete, assign, and so on. Each of these permissions represents, in different degrees, ownership privileges assigned by the corporation to agents and to work groups within the organisation.

2.03 Similarly, the crude statements we are accustomed to make about provenance disguise more complex relationships which can be expressed as differing types of ownership. A traditional file series is owned by the agency creating. This encompasses privileges of creation, viewing, editing, and deleting (subject to archival regulation). Ownership may be inherited by a successor agency, but as time passes the privileges associated with ownership will change, giving rise, in effect, to new kinds of relationship.

2.04 When a series is closed and control is passed from the originating agency to a successor, the inheriting agency acquires ownership but, if the series is already closed, these privileges are of a different character. Where once ownership implied create, view, open, delete, etc, in relation to a closed series, create privileges no longer apply. Thus the inheriting agency may view, open, and delete, but not create. Such an inherited but limited ownership is sometimes called “control” to distinguish it from “creation”.

2.05 But the situation is complicated still further by the fact that a file can be created in at least two ways – by creating the file and by adding documents to the file. Thus it is possible to create a file series by exercising the privilege of creating new files or by exercising the privilege of adding papers to an existing file. It is clear that such privileges are different and can exist in different time frames. The right to add papers to existing files in an inherited, but closed, series without the right to open new files being an exercise of “control” rather than “creation”. It will be clear that in a well documented system the change in the nature of ownership can occur without the succession of agencies – thus, the creating agency ceases to be “creator” when it closes a series (denying itself the privilege of opening new files) even though it continues to exercise the ownership privilege of “control” by allowing itself to continue to add papers to closed files.

2.06 Upon close examination, it will be found that a list of privileges, not unlike the privileges identified within records management software, define a variety of ownership relationships which it is possible to differentiate within any documentation system for recordkeeping.

2.07 The kinds of ownership privileges identified above are either absolute or conferred. The creating agency has absolute privilege over what records to create. Creation privileges exercised by staff members and work groups are conferred on them by the agency. Moreover, the ownership privileges establish different kinds of relationships. The ownership privilege of an agency to create records of its business is akin to the traditional provenance statement about creator of series. The conferred ownership privilege of creating records within a recordkeeping system is traditionally documented (if at all) as part of the system security model, not ordinarily in an archival finding aid.

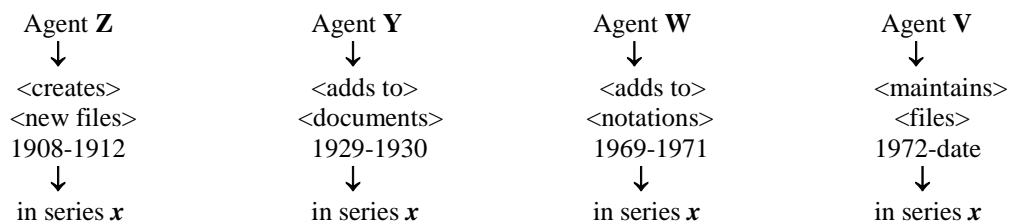
2.08 A distinction can thus be made between the creator of a record series (the agency exercising ownership privileges in deciding to make records of its affairs) and the creator of records within a series (the agents, usually employees, exercising ownership privileges conferred by the agency in deciding when to open a file). Each of these ownership relationships can (as discussed above) take a variety of forms depending on the type of ownership privilege being exercised.

2.09 Thus, the statement about records creation can be made in a variety of ways :

View 9 (ownership of a series)



View 10 (exercise of ownership rights within a series)



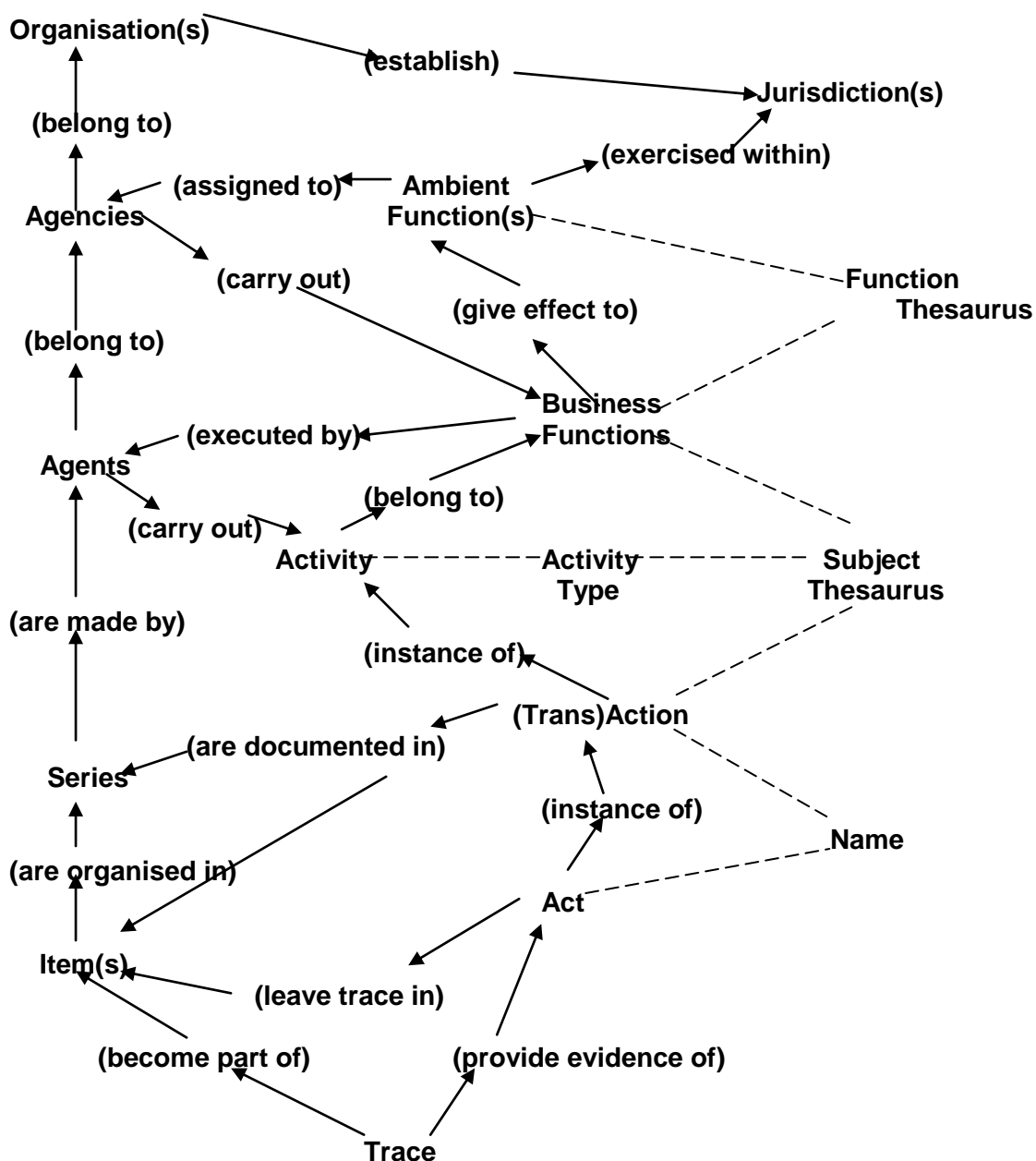
2.10 These different kinds of ownership privileges represent the application of two distinguishable processes : business processes and recordkeeping processes. Maintenance is largely a recordkeeping process and addition is largely a business process (i.e. the decision about what records to make). The distinction between these two types of process will be an important factor in any detailed analysis of the types of ownership relationship which can be documented – either about or within recordkeeping systems.

2.11 The discussion thus far has been about ownership relations between structural entities (agencies and agents) and recordkeeping entities (series and files). These are relationships between entities which are, in important ways, unlike each other. An articulated model of the kinds of unlike entities which could compose a documentation model for recordkeeping purposes is shown in **Figure One**.

2.12 Another set of issues arising when we discuss how like entities relate to each other. What kinds of ownership relationships exist, for example, between two agencies (superior

and subordinate)? How do these kinds of relationships convert (if at all) into succession relationships?

Figure One



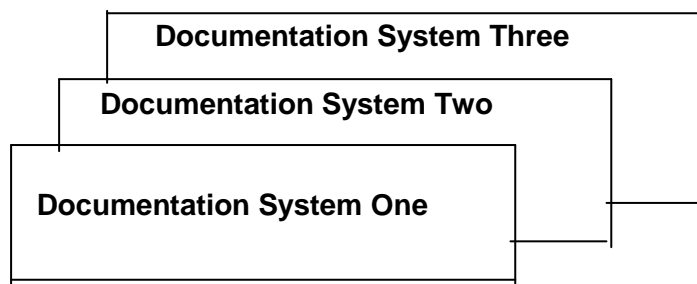
2.13 Are two entities of the same entity-type (e.g. agencies and agents) like entities or unlike entities? Which kinds of relationship rules apply? The proposition that succession relationships are ownership relationships in another guise seems to work when the ownership relationship is between two unlike entities, but it is not clear how it would operate (if at all) when the ownership relationship is between like entities. Thus, the proposition that a succession could be established by showing ownership relationships between agents and agencies might depend upon whether or not agencies and agents are regarded as alike or unlike entities.

2.14 Irrespective of the outcome of any speculation on this point, it will be seen that a model such as the one shown in **Figure One** affords the potential for numerous opportunities (represented by arrows for documenting ownership relationships within a single documentation programme).

2.15 Another set of issues arises when consideration is given to how relationships might be forged between entities emanating from different documentation programmes. This possibility is likely to occur in any networked environment. The model shown in **Figure One** can be made to be scaleable- see **Figure Two**.

2.16 Thus a government-wide archives programme using the model might identify the government (New Zealand) as an organisation and a department (Foreign Affairs & Trade) as an agency. Within the agency, however, it is Foreign Affairs & Trade itself which will occupy the space left for organisation and business units within the department will be “agencies”. Similarly, New Zealand might function as a mere agency within systems with an international perspective.

Figure Two



2.17 So, the same corporation, in such an environment, might be an organisation in one programme, an agency in another, and a mere agent from a third point of view. So long as each programme documents the same entity separately, no special relationship problems arise. A fascinating set of issues need to be considered., however, when we take the next logical step and ask how would relationships be made and maintained if, instead of duplicating each other, such systems supported each other in an integrated way. This would arise if, for example, a government department and an archives agree to maintain inter-dependent systems such that the agency entities documented by the archives were seen as organisation entities within the departmental system (on the scalability principle).

2.18 In such circumstances, many relationships would continue to be manageable within the discrete systems, but some would necessarily have to subsist between them. The rules for managing recordkeeping relationships between entities in different documentation systems have yet to be worked out. Those applying to managing relationships within a system can be given expression as common practice rules for recordkeeping systems. Provided two interdependent systems are both using the same common practice rules, it would seem possible to articulate a complementary set of rules governing the creation and maintenance of relationships between entities in two inter-dependent and compliant systems. These may turn out to be no more complicated than standards for versioning and rules about how reciprocal relationships are established (e.g. outwards and upwards). Knottier problems may be disclosed, however, upon deeper reflection. I have tentatively given these (as yet undeveloped) rules the title of General-Purpose Metadata Management Standard (GEMMS).

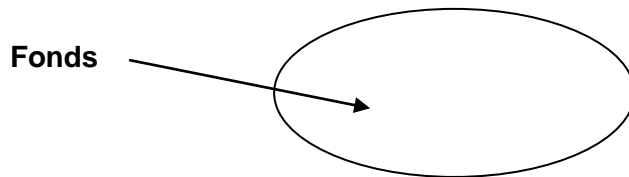
3.0 TAXONOMIES & FILLING THE SPACES IN BETWEEN

3.01 In **Figure One**² relationships fill the space in between the entities shown. This illustrates one view of the possible relationships between entities which are particular to recordkeeping. It is an implementation model. The underlying theory is that the Archival Fonds can be deconstructed into many component parts without losing its integrity or internal structure so long as the relationships are correctly documented. This process is roughly similar to the process of biological cell division. In **Figure Three**, the single Archival

² See Part 2.

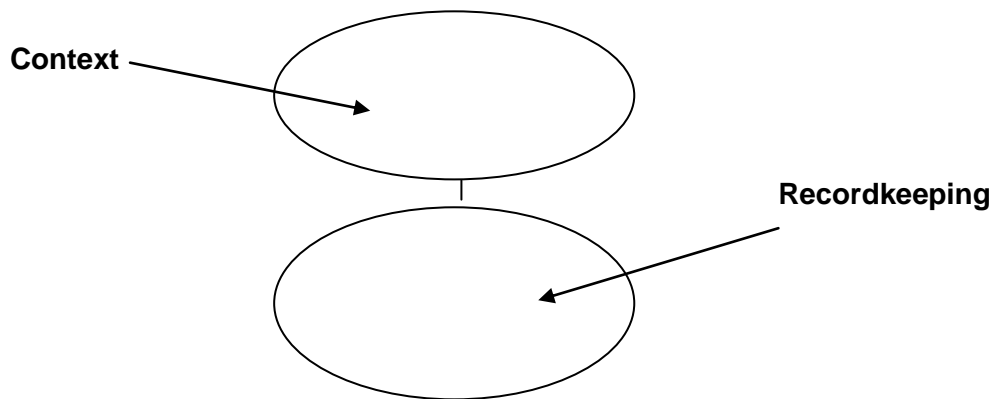
Fonds is represented. This shows a boundary only - all the structure is internal. We know that even the Fonds has external relationships and these complicate any theory of documentation based on the view that the Fonds is singular or “autonomous”.

Figure Three



3.02 Deconstructing the Fonds enables us to separately articulate its internal structure while preserving the Fonds itself by articulating relationships in the space in between. It also enables us to establish relationships between a component entity and entities having relationships with other Fonds to give new views of the entities in multiple contexts. The first degree of separation is, therefore, between Recordkeeping and Context :

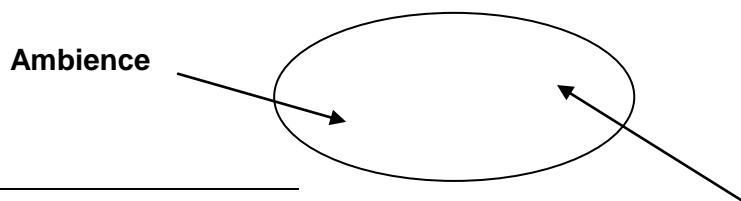
Figure Four



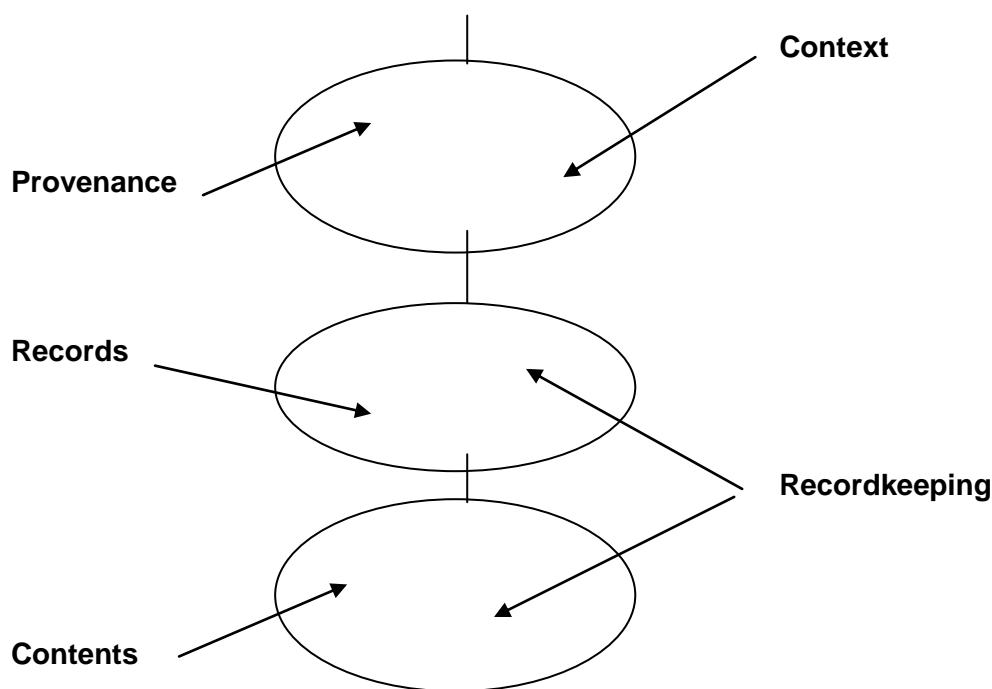
3.03 Two further degrees of separation are commonly made and these can be further deconstructed using the matrices developed in Frank Upward’s continuum model³ to create sixteen spacial divides within which recordkeeping relationships can be crafted.

3.04 **Figure Five** thus represents a different view (by entity type) of the implementation model displayed in **Figure One**. The crafting of relationships in the space between entities in these models can be roughly equated with what is coming to be called taxonomies in knowledge management.

Figure Five



³ Frank Upward, [Structuring the Records Continuum, Part Two: Structuration Theory and Recordkeeping](http://www.sims.monash.edu.au/research/rcrg/publications/index.html#recau)
<http://www.sims.monash.edu.au/research/rcrg/publications/index.html#recau>
First published: *Archives and Manuscripts*, 25 (1) 1997.
and [Structuring the Records Continuum - Part One: Postcustodial principles and properties](http://www.sims.monash.edu.au/research/rcrg/publications/index.html#recau)
<http://www.sims.monash.edu.au/research/rcrg/publications/index.html#recau>
First published: *Archives and Manuscripts*, 24 (2) 1996.



Continuum Axes (Upward) :

Identity	Recordkeeping	Evidence	Transactional
-----------------	----------------------	-----------------	----------------------

3.05 An introduction to taxonomies can be found in the Montague Institute Review (March, 2001) :

Taxonomies are structures that provide a way of classifying things -- living organisms, products, books -- into a series of hierarchical groups to make them easier to identify, study, or locate. Taxonomies consist of two parts -- structures and applications. Structures consist of the categories (or terms) themselves and the relationships that link them together. Applications are the navigation tools available to help users find information.⁴

Key differences exist, however, in how taxonomies are customarily used and how they should be used in recordkeeping. Taxonomical structures are verbal, whereas records registration is fundamentally non-verbal. While there is much that is similar, this difference points to a most fundamental distinction between the standard approach to taxonomy and the recordkeeping approach to relationships.

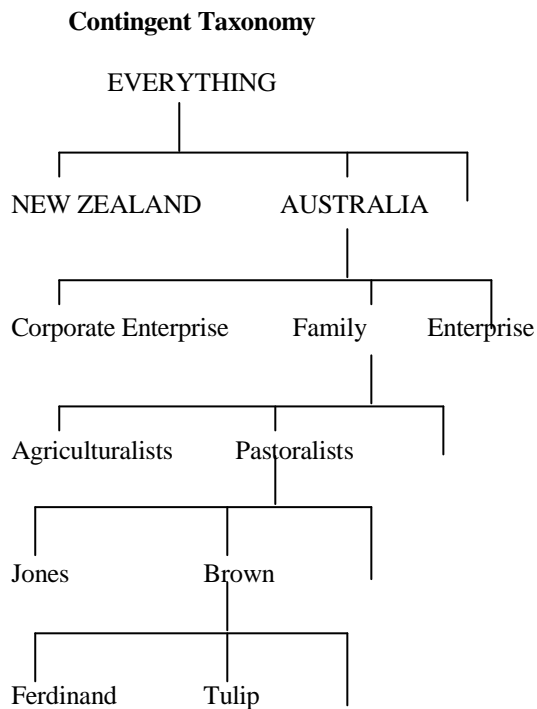
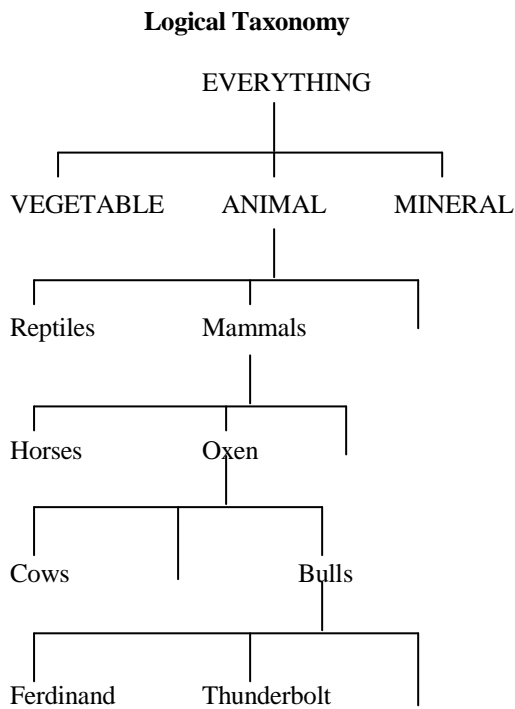
3.06 A taxonomical structure is a true hierarchy. It is logical. It is definitional. Recordkeeping taxonomies appear to be definitional because they too are concerned with establishing boundaries and content. The key distinction, however, is that the taxonomies of recordkeeping (relationships) are not truly hierarchical. For an exposition on this important difference (**Figure Six**) see my article on ambient functions⁵.

3.07 In a true taxonomy, Ferdinand the Bull is necessarily an animal belonging the genus *Bos taurus*. Each subordinate entity is definitionally part of the higher entity. Definition ensures that this is logically necessary. Once we assign Ferdinand, the individual, to the category "bull" he cannot be assigned elsewhere unless a mistake has been made.

Figure Six

⁴ Managing taxonomies strategically <http://www.montague.com/review/taxonomy3.html> downloaded at 11:55am NZST 16 July, 2002.

⁵ Chris Hurley, "Ambient functions : abandoned children to zoos", *Archivaria* 40, Fall 1995 <http://www.sims.monash.edu.au/research/rcrg/publications>



3.08 In a recordkeeping taxonomy, the relationships are not logical, they are contingent – Ferdinand is owned by Brown. Neither the records nor their provenance are related logically by anything in our documentation of them. This is the fundamental flaw in the ICA’s adoption of the so-called multi-level rule⁶ (ensuring that description is placed at the highest possible level and not repeating it at lower levels). Such a rule operates effectively enough in normal taxonomies, but is useless in a recordkeeping taxonomy because of the essential difference between true (logical) hierarchies and contingent hierarchies.

3.09 Recordkeeping is unusual in its approach to taxonomy. The difference comes about because we deal in evidence and documentary evidence involves taking an historical view of the entities being documented⁷. The relationships an entity has at the time it is used may be different from the relationships it had when it was created and both must be documented.

3.10 We share this unusual perspective with a few other professions. We share it with museum curators, who must understand the changing provenance of artefacts and with sociologists who study the development, structure, and functioning of human society. We share it with etymologists who study the source and formation of linguistic meaning. The relationship of English and French is different after 1066 to what it was before. It is no accident that Peter Scott, whose ideas revolutionised thinking about the taxonomy of recordkeeping, was formerly a linguist.

3.11 The “typical” features of a standard taxonomy, therefore, as they are understood in knowledge management :

- List of standard terms
- Hierarchical relationships
- Cross references ⁸

⁶ International Council on Archives, ISAD(G) : General International Standard Archival description 2nd edition 1999, p. 12 http://www.ica.org/biblio/com/cds/isad_g_2e.pdf

⁷ Ambient functions, p. 22.

⁸ Montague Institute Review (March, 2001), op cit.

are not typical of a recordkeeping taxonomy and their standard applications, such as helping :

- researchers find source materials
- readers locate information in a book
- Web visitors locate information in an electronic journal
- buyers locate products and services⁹

are different. This difference helps define the distinction between recordkeeping and discovery¹⁰. No greater confusion currently exists in the world of recordkeeping than the confusion between relationships in records and the taxonomies of discovery.

3.12 True taxonomies are used in recordkeeping. They are indicated by the dotted lines in **Figure One**. Most recordkeeping structure is non-verbal, non-logical, but the names of entities (as distinct from their registration code) must be controlled terminologically. For this purpose, the supporting thesauri of names and terms conform perfectly to standard taxonomical analysis.

3.13 The error lies in supposing that the recordkeeping hierarchy (relationships in records) also corresponds to, and can be dealt with, using the methodologies of taxonomy as those methods are customarily applied in the worlds of knowledge management and discovery.

3.14 When computerisation overtook the paper worlds of information and records management, two sets of functionality initially emerged. Information management quickly developed using the new technology to manage the data which was comprised in their materials and, in the areas of most interest to us, electronic document management systems (EDMS) came to serve their needs. The first records management systems (RKS), however, were effectively an automation of registry practices, rather than an automation of recordkeeping itself. Initially, the RKS would replace paper-based registry tools like registration, indexing, bring-up, movement control, and disposal. The lag which emerged at that time has never really been bridged. The result, now that EDMS and RKS systems are effectively merged is that systems are weighted significantly towards the functionality of EDMS and RKS functionality has taken a back seat.

3.15 The result is that the association of documentary records in these merged systems is established very largely using the tools and concepts of information management (with an emphasis on discovery) rather than recordkeeping (with an emphasis on evidence). Paper recordkeeping related documents in sequences, based on business processes, which were designed to establish meaningful relationships between documents in order to establish evidential meaning (rather than to simply facilitate discovery). Modern EDMS/RKS systems rely too heavily on folder structures representing “business classification schemes” and have not developed very much functionality at all to sequence documents in ways which support evidential needs.

3.16 The problem this creates is that folder structures (as distinct from filing rules) do not give us the methodology we need to make and keep robust evidential sequences in documents. It might seem that business classification schemes do so, but they are usually developed and applied using logical taxonomies, not contingent ones. In the real world,

⁹ Ibid.

¹⁰ Another insight may be derived from Figure Six. It will be seen that (except for the bottom two layers) contingency derives from the interspersal of layers of contingency between layers of logicity (or terminology). Thus “Everything” (a knowledge concept which can be analysed terminologically) sits on top of the layer for “Corporate” and “Family” enterprises – ideas which cannot be used to define something terminologically – an enterprise can be family today and corporate tomorrow. Similarly, Jones and Brown (contingent concepts) sit below “Agriculturalists” and “Pastoralists” (terminological concepts).

business classification schemes are generally developed in an unskilled way which sometimes gives them the appearance of being drawn up on contingent principles, but they are certainly applied in most EDMS/RKS system using methodologies based on the theory of logical taxonomies. There is sometimes an appearance of contingency because many practical applications of a business classification scheme actually place concepts (illogically) in an incorrect relationship with higher order concepts; this is simply the result of a lack of skill. It would be wrong, in any case, to suppose that the careless analysis of business processes which mostly occurs provides the basis for establishing robust relationships in records. Illogicality should not be mistaken for contingency.

3.17 There is a nice paradox here : the more that sloppy business classifications are “improved” to make them better conform to the principles of logical taxonomy, the worse they become for recordkeeping purposes.

3.18 To return to the underlying theme of these articles and thereby to demonstrate why all this matters : the sequencing of documentary records must be based on establishing the relationships between them which reflect the contingent arrangement of events which they purport to evidence, not the logical arrangement of ideas which support a standard taxonomy. This can be done using the process for converting an ownership relationship into a succession relationship – as outlined in Part 1.

3.19 It cannot be done, however, using this methodology, if the ownership relationships are expressed in logical taxonomies. The reason is that a defining difference between logical and contingent taxonomies is that, in addition to specifying how two or more entities are related (which both do), a contingent taxonomy also specifies when they are related. Obviously, this must be so. A logical relationship is (by definition, as it were) timeless, whereas a contingent relationship is time-bound. It is the *when* part of a contingent relationship which provides one of the essential mechanisms for converting an ownership relationship into a succession relationship.

4.0 ELECTRONIC SERIES – REDISCOVERING THE MYSTERY (OR, DESCRIBING THE UNICORN)

We have been spinning coins together since I don’t know when, and in all that time (if it *is* all that time) I don’t suppose either of us was more than a couple of gold pieces up or down. I hope that doesn’t sound surprising because its very unsurprisingness is something I am trying to keep hold of¹¹.

Identifying and describing series that are in electronic form is not mysterious. Archival institutions do not have to radically overhaul their descriptive standards to accommodate the ‘new kid on the block’¹².

God must have created mistakes for their wonderful value in illuminating proper pathways. In all of evolutionary biology, I find no error more starkly instructive, or more frequently repeated, than a line of stunning misreason about apes and humans ... If we evolved from apes, why are apes still around? I label this error instructive because its correction is so transforming : If you accept a false notion of evolution, the statement is a deep puzzle; once you reject this fallacy, the statement is evident nonsense (in the literal sense of unintelligible, not the pejorative sense of foolish)¹³.

¹¹ Tom Stoppard, *Rosencrantz and Guildenstern Are Dead*, Act 1 (London, Faber, 1968)

¹² Marion Hoy and Andrea Rosenbusch, “Describing Electronic Series : does it have to be a Mystery?” in *Convergence : Conference Proceedings of a Joint National Conference of the Australian Society of Archivists and the Records Management Association of Australia*, 2-5 September 2001, Hobart, Tasmania, p. 294.

¹³ Stephen Jay Gould, “The Declining Empire of Apes” in *Eight Little Piggies* (London, Jonathan Cape, 1993), p. 284

A man breaking his journey between one place and another ... sees a unicorn cross his path and disappear ... "My God," says a second man, "I must be dreaming, I thought I saw a unicorn." At which point, a dimension is added that makes the experience as alarming as it will ever be. A third witness, you understand, adds no further dimension but only spreads it thinner, and a fourth thinner still ... until it is as thin as reality. The name we give to the common experience ... "Look, look!" recites the crowd. "A horse with an arrow in its forehead! It must have been mistaken for a deer"¹⁴

4.01 A coin, thrown into the air, can be expected to land up heads more or less as often as it lands up tails. Yet the chances of its landing up heads next time following a throw of tails always remains 50/50. The reason for this is that throws of a coin are not a series. Those who cannot understand this should not try to document records and they should never play at two-up.

4.02 Consider, however, a different set of circumstances – a ballot determined by extracting marbles from a jar – an equal number of black and white totalling 100. When the first marble is drawn, the odds on its being either black or white are 50/50. If the first marble is, in fact, white, then the odds of the next marble drawn out of the jar being black are higher. This is because the boundary established by the jar limits the number of possibilities and each instance of drawing a marble out is accordingly part of a series. Using the same principle to try to predict the numbers in successive lotto draws is, however, stupid.

4.03 If we had some abstract set of descriptive requirements for acts of this kind, it would be possible to describe each of them using that methodology. If, however, our descriptive tool was designed only to describe instances in series, it would be a misapplication of the descriptive tool to use it for throws of the dice – notwithstanding that all the descriptive fields can be filled in and the resulting description is perfectly comprehensible. We would be describing throws of the coins as a series when in fact they are not – just like the addled gambler who imagines his chances of winning on heads are better immediately after a throw of tails.

4.04 It would be possible to describe a new-born puppy using the documentation required by the Registry of Births, Deaths, and Marriages to register human births. The resulting form could easily be accepted by the system and processed to produce a conventional birth certificate. This would not, however, mean that the thing thus being described was a human child.

4.05 In 1905, the American Museum of Natural History displayed a row of skeletal fossils of horses in ascending order of size demonstrating the “evolution” of the horse. The message conveyed by this description was that the modern horse (the largest in the progression) had evolved through stages and that each stage succeeded to and evolved from the last. It was asserted that the fossils were in sequence. In fact, that message was quite false – because the fossils on display were not in an evolutionary series.

In conventional charts and museum displays, the evolution of the horse looks like a line of schoolchildren all pointed in one direction and arrayed in what my primary-school drill instructors called “size place” (also stratigraphic order in this case). The most familiar of all illustrations, first drawn early in the century for the American Museum of Natural History’s pamphlet on the evolution of horses, by W. D. Matthew, but reproduced hundreds of times since then, shows the whole story : size, toes, and teeth arranged in a row by order of appearance in the fossil record ... But what is so wrong with these evolutionary ladders? Surely we can trace an unbroken continuity from *Hyracotherium* to modern horses. Yes, but continuity comes in many more potential modes than the lock step of the ladder¹⁵.

¹⁴ Tom Stoppard, *Rosencrantz and Guildenstern Are Dead*, Act 1 (London, Faber, 1968).

¹⁵ Stephen Jay Gould, “Life’s Little Joke” in *Bully for Brontosaurus* (New York, Norton, 1991), pp.174-175.

Each fossil was, indeed, an example of the evolution of the horse. But they were not instances of a progression or sequence. The fossils displayed did not exist in a definable relationship to each other of which the display was illustrative. A quite false impression of succession was conveyed by the way they were arranged and described.

4.06 The arrangement and description of series is fundamental to recordkeeping practice. It is only used by some to deliver information about dead systems to researchers in archival search rooms and on the Internet. Custodialists who wish to use it in this way must have access to the same descriptive tools to describe (as series) electronic records over which they would assume control as the rest of us will need to be recordkeepers in cyberspace. They are, however, unlikely to find them in a continuing fixation on the problems of custody or in borrowing methods used to document taxonomies in knowledge management.

4.07 The reason for documenting series is not to aid discovery. We document series because the evidential value of a single record depends (in large part) not simply on its context but also upon its connections with other things (chiefly context and other records). At its simplest, the organisation of the records by the recordkeeper into contingent sequences is how connections with other records are made. Records are not subsequently arranged into series so that archivists can describe them for the benefit of researchers. Records exist in series because that is how they are made and kept in the first place.

4.08 The question is not, therefore, whether a bunch of electronic stuff can be documented using a series description format; but rather whether electronic recordkeeping is in fact making and keeping electronic stuff in series. The question of how to document the stuff delivered from a records making process into the workings of an archival descriptive process is inextricably tangled up with the question of how electronic stuff is organised within a records making process. The answer may be “as series”, but then again it may not. There is nothing, of course, preventing us from offering our insights on serialisation to those designing and implementing recordkeeping systems.

4.09 Not the least of the weaknesses in the custodialist position is that they have failed to develop the descriptive tools they need to achieve custody. To apply series description to electronic records you are trying to take into custody, you must first be reassured that the electronic records you are taking into custody are organised into series as a result of the process of records creation which brought them about.

4.10 Sufficient grounds exist for intelligent scepticism that the world of electronic recordkeeping is as yet organising electronic records into describable series. We are probably passing through an intermediate stage, however. It is now possible to outline, theoretically at least, how series can (and probably should) be re-established within the realm of electronic recordkeeping. Until that happens, so-called transfers of electronic records into a custodial environment will not happily be describable using traditional methodologies.

4.11 The descriptive techniques which will be needed to document electronic series in archives custody will most likely come out of the engagement we now have with issues of recordkeeping in cyberspace. First, to paraphrase Mrs Beeton, catch your record. The custodialists, essentially in denial, must therefore await the results of those whose work regards storage and custody as incidental, not central, to the issue. It will be a sweet irony if the tools the custodialists need to do their work (viz. the descriptive techniques necessary to ensure the survival of electronic records in archival custody) are delivered to them by those of us for whom custody is neither here nor there.

4.12 As so often happens when we think outside the square of traditional archival methods, new solutions to new problems arising in cyberspace usually throw light on some hitherto unresolved problems in the world of physical recordkeeping. To anticipate, at this point, the

general conclusions of this article, it is likely that electronic series will present us with two problems which will require major surgery to traditional series description :

- a. a much more complicated set of issues around provenance, and
- b. a much higher incidence of records belonging to more than one series.

When we think through the implications of this insight, we find that provenance was just as complicated in the paper world and that sequencing of paper records was also not as unproblematical as it seemed.

4.13 Consider a series of book registers. In the paper world, we would describe the volumes as a series according to the system of arrangement given to the books by the records-maker. Thus, we would expect the spines of the books to show the volume numbers or years used to organise the volumes on the shelves. This organising principle or sequencing of the volumes is the basis upon which we would identify and describe the volumes as a series.

4.14 Even in the paper world, however, we would have understood that the organising principle for the volumes was not the same as that upon which the data contained in the books is arranged. The system of arrangement of the entries within the register, often organised upon quite a different basis, is also significant. Thus, the entries might be arranged chronologically (for an annual single number system) or according to some classification scheme (for a multiple-number system). Importantly, however, the contents of each book begins afresh (e.g. by returning to the number “1” at the beginning of each volume and prefixing it with a year date). Different sets of numbers might be grouped by prefixes given to certain files (e.g. “P” for personnel files) or in sets of file number blocked out in advance for use in regional offices. Entries in even the most simple register will be some combination of a chronological order and a registration order.

4.15 The organisation of the contents of a series and of the physical packages in which the content is held, while it may sometimes be identical, is frequently different. Except in very problematic cases, we have (in the paper world) preferred the organisation of the physical packages as the basis for “serialisation” over the organisation of the data contents. Thus we will describe a series of book registers based on the sequencing of the volumes, rather than the contents within and across volumes.

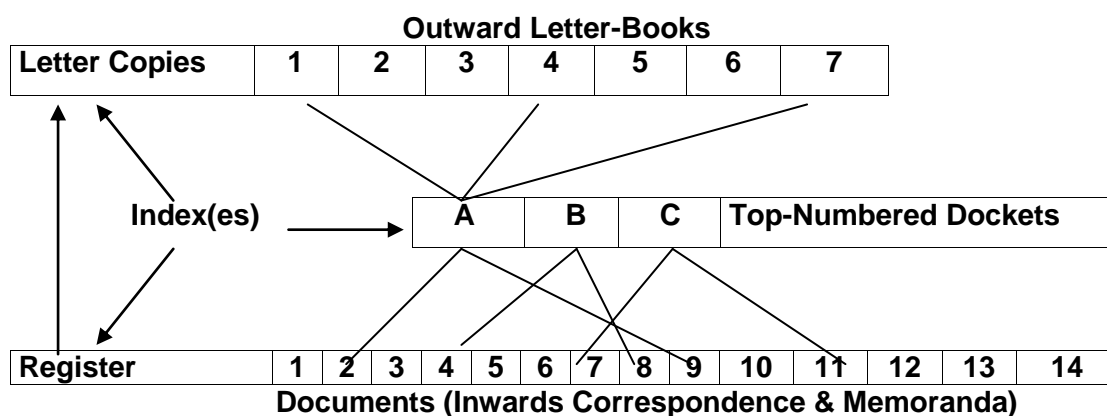
4.16 We are choosing to emphasise one sequence at the expense of another in order to fit the data into a preconceived idea of what a series is like. A more systematic approach would be to regard the contents of the series (both the data and the packages of data) as an organisation of records-stuff and observe (if the facts require it) that this assemblage involves several sequences, not one.

4.17 It is clear, however, that we could have also made a series out of the contents - in preference to the physical packages. Thus, identifying as a series the entries in a body of book registers (rather than the registers themselves) we now see to be not only possible, but arguably more sensible.

4.18 In the world of physical sets, we would, of course, have to register the physical packets. We can now see, however, that just as the context of the *fonds* is virtual vis a vis the physical series, so too the physical series could be treated as virtual vis a vis the data contained therein.

Figure Seven

Nineteenth Century Docketing System (with Top-Numbering)



4.19 A nineteenth century docketing system employing top-numbering provides an even more obvious example. Each piece of incoming correspondence is registered and docketed. Outgoing replies would typically be copied into a letter book cross-referenced to the docketed using registers and indexes. The control records (registers and indexes) would be a guide to the physical location of each docket and the whereabouts of replies in the letter-book.

4.20 More importantly, however, these control records document sequencing of the records (for recordkeeping purposes) which is different from the order of the registration numbers. If you want to “assemble” a transactional record within this series it is necessary to use the control records to guide you to the disparate documents which make up the whole record.

4.21 New correspondence would be freshly registered and previous papers often attached (top-numbered) into the new docket. The removal of the old docket from its place in the sequence to be filed under the new number used to register subsequent business would be recorded in the register. Not all old docketed were top-numbered, however. Some were simply cross-referenced and, in some cases, there is no evidence that a connection was ever made between two pieces of business. A complete transactional record does not exist in these systems except as a “view” provided by the operation of the system as a whole.

4.22 Archivists have the choice of registering as a series the sequence of registration numbers (1, 2, 3, etc) - many of which no longer exist because they have been top-numbered - or the sequence of top-numbered docketed (A, B, C, etc) – which has unexplainable gaps to someone unfamiliar with the process. Whichever is chosen, it will be seen that both sequences are relevant to construct both these and alternative views of the data.

4.23 It will be seen that the physical manifestation of the correspondence with Jones will not be the first registration item (no. 2) nor the first index entry (linking nos 2 and 6) but rather the last docketed into which letters from Jones were top-numbered (no. 9). As a recordkeeping system, it is necessary to document the organisation of data into four sequences (or series) :

1. Registration order (1, 2, 3, etc.)
2. Transaction order (A, B, C, etc.)
3. Physical order (arrangement of surviving docketed)
4. Arrangement of entries in the letter books.

In addition, this system presents us with at least three other arrangements of data :

1. Arrangement of the registers themselves
2. Arrangement of the letter books
3. Arrangement of the index.

4.24 It is also possible that the arrangement of entries within the Letter Books and the Index provide alternative arrangements. In all, this makes for a possible identification of 9 different sequences (or series) within this one recordkeeping system where, in the physical world, we would ordinarily only identify three (viz. the surviving docket, the letter book, and the Index). I have long argued that the world of electronic recordkeeping should look to nineteenth century docketing systems for its model of how to organise electronic records, rather than the silly attempt to emulate files in cyberspace using "folders".

4.25 What files are good at, however, is putting a boundary around business processes (and organising the documentary traces, of course). Records are essentially the intersection of recordkeeping processes (e.g. filing rules) and business processes (e.g. classification rules). In the paper world, recordkeeping processes gave a sequence to documents that preserved, but did little to embody, business process. In cyberspace, the analysis of business processes (the key to system design in the IT sense) will also provide the metadata we need as tools to identify, describe, and preserve series.

4.26 Why is any of this important? If we did describe any convenient body of data that comes our way as a series (using the practices we employ to document the largely physical sequences of paper records resulting primarily from the imposition of a recordkeeping process over the detritus of a business process) what would be lost? The answer to that question, once appreciated, is shattering. The answer is : everything that makes a record important as evidence.

5.0 Sequencing or Serialisation

archival bond : The relationship that links each record, incrementally to the previous and subsequent ones and to all those which participate in the same activity. It is originary (i.e. it comes into existence when a record is made or received and set aside), necessary (i.e. it exists for every record), and determined (i.e. it is characterized by the purpose of the record).¹⁶

5.01 We have so far examined how

- ◆ the two most critical relationships in records, ownership and succession, are symbiotic (Part 1)
- ◆ these manifold relationships, expressed merely as ownership ideas, exist in space and time (Part 2)
- ◆ taxonomies governing the documentation of recordkeeping relationships differ from those facilitating discovery (Part 3)
- ◆ fundamentally flawed is any view of recordkeeping relationships based merely on association or accumulation (Part 4).

In this Part, an examination will be made of the significance of sequencing in identifying, documenting, and managing "series".

5.02 Not all records exist in series. Notably, registration, notarial, or declaratory records may exist in isolation from any fellow, though such records may indeed be "filed" and would usually be supported by sequential recordkeeping of one kind or another. In most other cases, however, typically in transactional records, the connection of the record with some process (either a business process or a recordkeeping process, or both) and the preservation of that connection is what confers value on the records as documentation of an event or circumstance (evidence). A true isolate – one may hypothesise about the diary of Robinson Crusoe - derives its "record-ness" from the bond it has with circumstance (i.e. context), rather

¹⁶University of British Columbia - InterPARES Project, *The InterPARES Glossary : A controlled vocabulary of terms used in the InterPARES Project* (No.2, Vol.1) January 1, 2002. See - <http://www.interpares.org/documents/InterPARES/20Glossary/202002-1.pdf>

than with other records.

5.03 In the paper world, the relationship(s) between a transactional record and the associated processes was the basis for serialisation. At its simplest, if the recordkeeper numbered records (1, 2, 3, ...) that process established the series. Records were, and oftentimes still are, organised into series for convenience, retrieval, and (most importantly) for evidence. In earlier Parts, we have seen how even in the organisation of paper, more than one sequence is involved (e.g. the sequencing of documents on a file, the sequencing of files containing the documents, the sequencing of incoming letters in a register of correspondence, the sequencing of outwards letters in a letter book). Even in the physical world, therefore, documents can belong to several sequences simultaneously – sometimes physically and sometimes virtually. We know that in cyberspace, where all important relationships are virtual, the number of sequences to which a record (or part of a record, or accumulations of records) belong is (potentially) much higher.

5.04 It may seem that this is a defining difference between physical and electronic records, but that is not so. Even paper records could physically belong to two sequences simultaneously – documents on the file, files in the accession, accessions in the series, series in the *fonds*. Historically, we have fixated in the serialisation as the most significant sequence to which a record belongs, but it can be readily seen (once one borrows the insight from electronic document management that a document may have manifold simultaneous associations) that, even in the paper world, these different sequences were all potentially significant recordkeeping manifestations. To elevate a series (defined as the physical organisation of items/files) to a position of significance over others – potentially as or more important in documenting evidence – we can now see was an erroneous attempt to make the series our only instrument for preserving provenance and original order. (This is not about the debate over the so-called "series system"; this role is assigned to the series in all methods of archival documentation.)

5.05 Insofar as the physical series we decided to preserve and document was usually the recordkeeper's preferred means of managing his records, this was understandable and laudable. Insofar as it has baffled our understanding of the truly infinite and complex network of relationships in records, equally or even more suitable for preserving their evidential value, especially in cyberspace, it has been detrimental. We have, of course, always recognised alternative sequencing principles – the preservation of provenance by documenting "creation" is an obvious recognition of a higher level sequence to which records-in-series also belong. The series, however, meaning the actual physical organisation of files or dockets was regarded as primary – even "real".

5.06 The first fundamental division in the analysis of transactional recordkeeping is between the doer and the deed (see **Figure Eight**). In traditional terms, a record (documenting a circumstance or event) involves a creator (performing the deed) and a record (documenting the deed). During the registry era, corporations separated the deed into two processes – business processes and recordkeeping processes. Registries received, classified, numbered, despatched, and filed correspondence. Registries had control of the process because they acted as the mail room (received the mail), controlled the creation and movement of files, and managed despatch (they had the stamps). With the onslaught of desktop PC's and the dissolution of the registries, responsibility for the recordkeeping process was returned (usually unthinkingly) to those already responsible for the business processes. There was little acknowledgment (let alone understanding) of this, no funding for it, no training in it, no accountability for it. Little wonder that recordkeeping processes are now in disarray.

5.07 Eventually, of course, poor recordkeeping results in poorly managed business, but the evil consequences take a little longer to show up – like the erosion and salination problems turning up in Australia 200 years after the ground began to

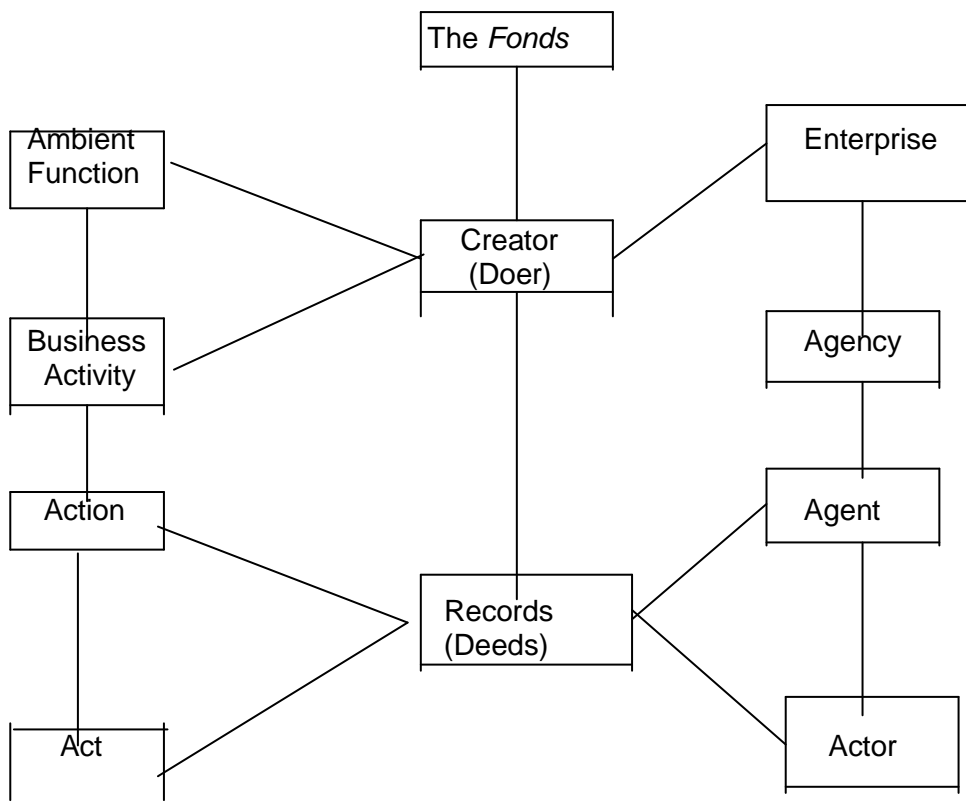
cleared for settlement. The fact that computerisation has destroyed recordkeeping processes should not, however, be lamented – one might as well lament the weather. It is natural for computerisation to break down existing processes and rebuild them in ways which facilitate achieving the same ends by using different ways of doing business. The primary failure of recordkeeping has been the futile attempt to deal with this by

- ◆ seeking simply to emulate outmoded methods in cyberspace, or
- ◆ borrowing inappropriate methods from document management and discovery

and all this boils down to a failure on our part to imagine how to achieve recordkeeping ends in cyberspace by abandoning inappropriate methods and figuring out how to accomplish traditional ends using newly developed means. This was David Bearman's message to us all over a decade ago and we are still struggling to comes to terms with it.

5.08 In cyberspace, the separation (along a life cycle) of the decision to make a record and a later decision to keep a record (file it) and the yet later decision to dispose of it is (to say the least) difficult - and probably very impractical and expensive. In the continuum of recordkeeping, we can see that these are not three different decisions at all - just manifestations of one decision ("do I need a record of this"). In the paper world, it was convenient and effective to implement this decision in three stages. In cyberspace it will not be.

Figure Eight



5.09 Just as some have perceived no problem in discovering series in cyberspace, others have doubted whether or not they exist at all. Series (understood as meaningful sequences into which records are arranged or bonded in order to substantiate their evidential meaning) must still exist, even in cyberspace – not simply because they are effective or useful, but because they are meaningful. In **Figure**

Eight it is possible to see that records (the documentary evidence of deeds) can have relationships with a variety of entities without involving any of the concepts traditionally associated with recordkeeping (items, files, docketts, accessions, series, *fonds*) at all – in the Figure, relationships with doers (agents and actors) and with functions (actions and acts) are shown, but this too is not exhaustive.

5.10 In the paper world, the sequence of actions which formed the basis of serialisation was that of the recordkeeper – filing, numbering, indexing, moving. The focus of this process was the detritus left behind by a business process. Thus, a letter (or copy of outwards correspondence) on a file was not seen (technically) as the documentary evidence of a business transaction, it was a logically separate manifestation of an activity (or process) undertaken by the recordkeeper in an attempt to preserve the documentary remainder as evidence of that business process. Logically and conceptually, the file was the creation of a recordkeeping process, not of a business process. Juxtaposing an inwards letter and a copy of the reply on the same file simply mimicked the actual business process out of which they fell into the recordkeeper's way.

5.11 We are accustomed to think of these documents as being in series because of what the recordkeeper has done with them – associating them together and keeping the file into which they were placed in a sequence of files documenting the business (or some aspect of the business). In fact, however, the recordkeeping sequence is derived, not from the process of filing, numbering, and placing, but from the association the two documents have with each other by virtue of the separate acts they represent being linked within a business process. The link between a copy of an outwards letter and the incoming letter to which it is a reply comes from the business decision to answer the letter, not the recordkeeping decision to file them together.

5.12 Of course, the recordkeeping process and the business process are interdependent. Even though the relationship between the two documents is based in a business process, the preservation of the evidence that they are related is based in the recordkeeping process. It is possible to deduce from internal evidence alone that a document purporting to be an answer to a letter is related, but the only significant evidential relationship is a filing process which proves that the document in hand (and not some variant copy or draft) was the final which was actually sent.

5.13 As we have seen, however, most of the recordkeeping methods used the paper world (which have been given pre-eminence in our theorems for documenting and managing records) are practically useless (in the sense of being of no practical value) in cyberspace. Rather than emulating the recordkeeping processes of the paper world, therefore, in an attempt to deal with electronic records, we must now strip away the recordkeeping processes and begin with an understanding that recordkeeping processes were never more than an attempt to emulate the business process out of which documents came – i.e. the evidential relationship between two documents comes not from their organisation in a recordkeeping process, but from their emanation out of a business process. The relationship does not exist between two documents, it exists between two deeds. It will be seen from this what a false path it is down which those are traveling who, having abandoned (sensibly) paper-based recordkeeping methods in cyberspace, have (instead of searching for evidence-based alternatives) simply adopted the methods of document management and discovery, or (one might add) of digital preservation.

5.14 What this means in practice is that we don't need systems for saving digital objects as records, archiving digital objects, adding metadata to digital objects, in short doing anything to digital objects which has not already been pre-determined in the design of the systems supporting business processes within which they have been

generated. What we need, therefore, are systems which appraise the particular business process within which a digital object is created (determine what objects are needed) and which can then save those (and only those) as records of the business. In order to do that, we need metadata management systems which identify, document, and manage the analysis of business functions so that this appraisal can then be done.

5.15. In a recent listserv debate, I raised a related question : "how much can we achieve by [merely] logging or "registering" business transactions instead of archiving (or filing) the associated documentation? Hardly anyone (in our field) is dealing with this latter issue yet, but it is fundamental. Computers can log actions or document them with equal facility, whereas in paper systems registration was usually an additional task. Indeed, in IT logging is automatic, documenting is the additional task. As so often in cyberspace, things become topsy turvey at the implementation level. So one tactic we might well look at is moving the documentation of business into registration mode (as the default) and documenting business with documentation only on the rare occasions when it is really necessary."

5.16 Where will systems be found which appraise work? I think the answer lies in analysing, defining, and managing work space (as functions) so that the corporate agent ("user") is located within appraised work space when working in any system. Unfortunately, most appraisal methodologies proclaiming themselves to be "functional" are simply old-fashioned records appraisal masquerading as such (I except the ground breaking work done in Canada and the Netherlands). True functional appraisal, when it develops, will enable a system to know the value the corporation places on the work being done and then the decision about whether or not a record needs to be made of it and for how long it needs to be kept is made (as it should be) by the corporation, not the agent. In fact, the agent's ability to decide whether or not to make and keep a record is then removed almost entirely (as it should be). The agent then won't even have to think about it. He can indicate that metadata which is particular to the transaction in which he is participating - the only part of the metadata which needs to be supplied by the agent in such systems.

5.17 Too often, the debate about electronic recordkeeping focuses on the tools rather than the task. It is not thus that recordkeeping can be re-engineered into cyberspace. Mere replication of the methods of the paper-bound registry will get us nowhere. Distilling the principles upon which those methods were based, however, even when they were seldom if ever articulated in ways now useful, is an essential. Having now outlined a theoretical proposition based on such a distillation : viz. that documentation of corporate transactional records must be based on functional analysis and linked to appraisal, the practical application of this principle will be examined in Part Six.

6.0 EVERYTHING IS AN EPISODE IN THE LIFE OF SOMETHING ELSE

“... agencies are episodes in the life of a function ...”¹⁷

6.01 To extrapolate : everything is an episode in the life of something else. So it appears, at any rate, on a recordkeeping view. This is the idea to which concrete expression (practical implementation, if you insist) was given in Part One. There, we saw that families, people, enterprises, and agencies¹⁸ - entity/objects expressing ideas about identity or provenance - can be understood in relation to functions of which they are the successive embodiment (episodes) and **hence** in relation to each other. We saw how a sequence of

¹⁷ Chris Hurley, “Problems with provenance” *Archives & Manuscripts* November, 1995 (Vol. 23, No. 2), p. 253 which may be found at <http://rcrg.dstc.edu.au/publications/provenance.html>

¹⁸ What are now being called “authorities” in the professional discourse.

ownership relationships (understood as episodes) within the life of a function provided the basis upon which a sequence of succession relationships could be established between the entity/objects that carried on the function in each episode. Later we shall see how a sequence of ownership relationships (episodes) in the life of a (trans)action can provide the basis upon which a sequence of succession relationships can be established between the entity/objects that document the (trans)action – and hence establish the basis for serialisation in cyberspace (or anywhere else).

6.02 It is being proposed, in other words, that the mystery¹⁹ of the series (cf. Part Four) lies in the succession of episodes with which documentary traces are associated. It is not the documentary traces which are in sequence, but the episodes in life which they document. In the paper world, it is not the original order of the papers which is ultimately important, but the original order of the life-events which they document. A recordkeeping process organises the traces into a sequence which provides best evidence of the sequence of events in a business process. In cyberspace, it now seems likely, technology will be able to track the sequences of the manifold business processes through which documentary traces pass. Recordkeepers, involved in the design and maintenance of such systems must identify which sequences should be protected and preserved²⁰ and supply the enduring source of metadata which will encapsulate the traces which track those sequences in evidential armour.

6.03 The demonstration in Part One of the principle that sequence is implicit in ownership showed how this key concept might be applied into the world of recordkeeping. It derived from observations about how provenance entity/objects dealing with identity and functional entity/objects dealing with purpose behave in the real world which recordkeepers encounter in modern times when dealing with corporate enterprises both public and private. It needs to be noted, however, that the implied nature of provenance-to-function relationships expounded in Part One is particular to time and place. It is not the basis of a universal principle, but rather the demonstration of one.

6.04 The concepts in which we clothe the kind of entity/objects with which we deal and the modelling we use to manage them in the particular, contingent space where we operate should not be confused with a conceptual model. In contingent space, an organisation or enterprise is an ambient entity owning agencies. Conceptually, this must be expressed differently : A provenance entity is the child of one or more ambient entities (ambience is the context of provenance). It follows that anything that gives context to provenance (whether it is an enterprise or not) is ambient. You cannot say that an enterprise comprising numerous and complex parts is necessarily ambient, regardless of whether or not it fits some contingent definition of “organisation” – even if recordkeeping appears to be carried out by the organisational parts rather than by the enterprise.

6.05 The rationale for the existence of the enterprise may appear to you or me to be the organisation of the component parts through which the enterprise acts. By assigning it an ambient role in your descriptive system, you are adding this perception to the documentation of recordkeeping acts - imposing your perception onto the face of the record. This is not a criticism; giving context to evidence is a legitimate recordkeeping act. The point is that it is not necessary to use an enterprise comprising numerous and complex parts as an ambient entity/object. Ambience is not implicit in the nature of a complex enterprise.

6.06 It is a mistaken understanding of this, and the observation that the enterprise does not produce records except through the activities of its component parts, which has led

¹⁹ “**mystery** : ... 7.(pl.) rites or secrets known only to those specially initiated ...” *The Penguin Macquarie Dictionary* (Ringwood, Victoria, Penguin Books, 1968), p.410.

²⁰ And, it should not need to be said, useable. It does need to be said, alas, because of certain silly criticisms that are still being made about recordkeeping being hostile to use.

Australian and New Zealand recordkeepers to promulgate a rule that organisations and families cannot create records (even if they do)²¹. What this means at an implementation level is that, if you nominate something as an “organisation”, it should be the kind of enterprise that acts, in your perception, indirectly through its agents, not directly. Or, in the alternative, if you have something to document that is a record-creator, you should document it as a provenance rather than as an ambient entity. In this implementation view, an enterprise cannot be a record-creating entity (or, if it is, it isn’t an enterprise). The correct view, however, is that an enterprise may be either ambient or provenance or both – depending on the circumstances.

6.07 The ICA’s standard for describing identity entity/objects, however, eschews this rule. The ICA standard tries to provide rules for the description of any identity entity/object (or so they believe) which can be either an organisation, and agency, and agent, or an actor as portrayed in Figure One. This means, to use an example which is becoming an exemplar for the confusion of mind which all this is generating, that in ICA parlance an “organisation” can write a letter, whereas in Australian (“Series”) parlance it cannot. Australians are coming dangerously close in their implementation models to saying that a letter must be the contents of a record and cannot, therefore be composed by an “agency”, much less an “organisation”. Some tuned-in ICA folk could be forgiven for seeing all this as a vindication of the *fonds* and an acceptance by the antipodeans of the Multi-Level Rule²² : viz. that relationships are formed logically according to the characteristics of entities rather than contingently according to their use.

6.08 Who is correct? Well, neither of them really. Certainly, an “organisation” can compose a letter but when it does so it is not an “organisation” as most implementations of the Australian (“Series”) system understand it. When an organisation writes a letter it is an actor – an entity/object representing structure at the level of content (content of what is a question we may get to in a later part). Suffice it to say here that an entity/object must be defined (conceptually) not by its characteristics but by its relationships. When an enterprise is the parent of entity/objects that function as record creators then it is an ambient entity/object in the area of identity. Should the same enterprise, with identical characteristics, operate as a letter writer then, from that point of view, it is a contents entity/object in the area of identity – an actor.

6.09 It is simply not possible, by observing the characteristics of an entity/object *a priori*, to say what kind of function it performs in a recordkeeping process *posteriori*. In order to do that, it should surprise no one to learn, you must observe and document what function it actually performs in a real recordkeeping process. When you put it like that, it really is obvious. As we have already seen, all recordkeeping is contingent. The relationships between any two entity/objects cannot be inferred logically from their nature and characteristics – they can only be observed contingently from their actual behaviour, from the inter-action they have in the real world with other entity/objects.

6.10 To illustrate this more universal principle, let us return to the beginning of Part 6 and observe that it is equally possible, conceptually speaking, for functions to be episodes in the life of an agency. It is not usual in the recordkeeping world with which we are familiar, but it is well known to history. In earlier times, offices were stable and it was their functions which altered. Examples are numerous. Let that of the office of chancellor suffice.

6.11 The original chancellors

²¹ It was the observation of this fallacy which led me to explore the phenomenon more deeply in my article : “Problems with provenance” *op. cit.* Conceptually, the rule is : ambience gives context to provenance, provenance gives context to records, and records give context to documents.

²² In the case of some antipodeans, they would be correct.

were the *cancellarii* of Roman courts of justice, ushers who sat at the *cancelli* or lattice work screens of a basilica or law court ... later ... the *cancellarii* were promoted at first to notarial duties ... Under the Frankish kings ... the *cancellarii* were subordinates of the great officer of state called the *referendarius*, who was the predecessor of the more modern chancellor. The office became established under the form *archi-cancellarius*, or chief of the *cancellarii*. Stubbs says that the Carolingian chancellor was the royal notary and the arch-chancellor keeper of the royal seal ... Such an office possessed an obvious capacity for developing on the judicial as well as the administrative side ... In England the office of chancellor dates back to the reign of Edward the Confessor, the first English king to use the Norman practice of sealing instead of signing documents; and from the Norman Conquest onwards the succession of chancellors [in England] is continuous²³

These are but the first steps in the long and convoluted pathway by which the English office of Lord Chancellor (only now on the verge of extinction) became head of the British legal establishment (and, incidentally, responsible for the English national archives). Along the way, the office became speaker or prolocutor of the House of Lords. This is a fine example of functions as episodes in the life of an agency.

6.12 Before restating our general principle as it relates to the overall theme of these articles and looking into its application at the granular level of creation and capture, let us establish a more unified view of the methods by which context can be established and managed. To do this, allow me to introduce you to a HERO²⁴ – see **Figure Nine**. The HERO is based loosely on the results of the SPIRT Recordkeeping Metadata Project²⁵ and assumes an object-oriented technological environment of the kind presaged by David Bearman²⁶.

6.13 The HERO functions within a system as the validation or source entity/object for some recordkeeping metadata. Theoretical questions not addressed here include:

- a. Can the HERO be the validation for all recordkeeping metadata?
- b. Can a HERO be sourced from outside a system?²⁷

For the purposes of this illustration, let us assume that we want every recordkeeping object to carry (either inscribed upon it, inherited by it, or referenced to it) certain data about the circumstances of its creation and use. This is a not uncommon recordkeeping requirement. For the purposes of this example we will assume seven mandatory metadata fields. There will, of course, be more than that but many (including creator, dates, versions, security, etc.) can now be fairly safely assumed to standard features in any system - though they must, of course, still be specified in any requirements document.

Figure Nine
THE HERO (Hurley's Enduring Recordkeeping Object)

Category Type	Identifier
Reference	Control Dates : --: Created --: Due for Revision --: Revised --: Deleted

²³ *The Encyclopaedia Britannica* (Eleventh Edition, 1910-1911), Vol. V, pp.832-833.

²⁴ Hurley's Enduring Recordkeeping Object

²⁵ Glenda Acland, Kate Cumming, and Sue McKemmish, "The end of the beginning : the SPIRT recordkeeping metadata project" Paper for *Archives at Risk: Accountability, Vulnerability and Credibility, 1999 Annual Conference of the Australian Society of Archivists, July 1999* which may be found at <http://rcrg.dstc.edu.au/publications/asaq99.html> . See also Sue McKemmish, Glenda Acland, Nigel Ward, and Barbara Reed "Describing records in context in the continuum : the Australian Recordkeeping Metadata Schema" *Archivaria* (48) Fall 1999 which may be found at <http://rcrg.dstc.edu.au/publications/archiv01.htm>

²⁶ David Bearman, "Item Level Control and Electronic Recordkeeping", *Archives and Museum Informatics*, vol.10, #3, p.195-245 which can be found at <http://www.archimuse.com/papers/nhprc/item-lvl.html>

²⁷ That is, can a system-dependent object find its validation from a context which is documented outside the system? Can the HERO transmit validation by operating in conformity to a general-purpose extensible metadata management schema (GEMMS)?

Existence Dates	Use/Contents Dates		
Name/Title			
Alternative Name/Title (Co-Ordinate)			
Alternative Name/Title (Subordinate)			
Version	Author		
Author's Notes	Sources		
Business Rules	Level		
Status (Entity)	Status (Documentation)		
Security	--: Access --: Edit etc		
Child of	Dates		
Interaction	Dates		
Predecessor/Successor	Date		
Jurisdiction	Dates		
Subject	Authority		
Sequence/Series	Classification/Function		
Abstract (Scope Note) :			
Language (Resource)	Language (Content)		
Location			
Legislation (Entity)	Legislation (Resource)		
Event History			
--: Event ID	--: Event Type	--: Event Description	
--: Event Date/Time	--: Action Officer	--: External User	
Disposal Action			
Disposal Authorisation			
--: Authoriser	--: Date	--: Verification	--: Notification
Disposal Authority			
--: Authorisation	--: Version	--: Record Class	--: Status
--: Sentence			
Content			

6.14 In **Figure Nine**, the HERO itself carries the same mandatory fields as any other entity/object, so it can be used to demonstrate both the source of the mandatory metadata and its use²⁸. The HERO can be the vehicle for any of the entity/objects shown in Figure One. Being an entity/object in its own right, the HERO is not simply a description of the components of the recordkeeping process, it is (from the system's point of view) the thing itself. We do not simply have a description of the records-creator as part of the recordkeeping process, we have the records-creator itself (him or her self) inside the system and, if we so design it, immutably part of the record forever.

6.15 In an object-oriented system, the universal HERO type (super type) will carry all of the (meta)data that is common to the various entity/object types which are possible in an Australian ("Series") System application. As we have seen in Figure Eight, these can be laid out on a dissection table illustrating the types into which the *fonds* can be deconstructed. What the HERO represents is a bringing back together again of all the common features of the entity/object types into which a *fonds* has been deconstructed using Australian ("Series") System.

6.16 The next step is to organise the remaining (meta)data – that which is not common – into HERO sub-types, see Figure Ten. Anything belonging to a HERO sub-type will thus inherit metadata from the HERO sub-type (directly) and from the HERO super-type (vicariously through inheritance via the HERO sub-type). It will be seen that I cannot think up much metadata that cannot be held in the super-type, but this is, no doubt, a failure of imagination on my part.

²⁸ In the real world there is an architectural problem with having HEROs inscribed with the same metadata requirements as the objects referenced to them, but we will ignore that. Whether HEROs are just like any other object, super-objects, or look-ups in a linked relational database is a matter for the techos.

6.17 All this is a paradoxical kind of vindication for the ICA’s Multi-Level Rule (about which I have been so scathing). After nearly fifty years, the internationals are just now undertaking the process of deconstruction initiated under the Australian (“Series”) System so long ago. Meanwhile, here am I going back in the opposite direction (ships passing in the night in a fog of mutual incomprehension) and reconstructing all those component parts into a single (heroic) entity/object type. Well, if you have followed me thus far, you will know that is not really what I’m doing, but the humour of it is there to be enjoyed all the same. The HERO is not, of course, an implementation of the ICA’s rule (which remains, as I have said, flawed because it assumes a logical application). Each HERO simply provides one view, one of many, both in and through time. It satisfies my primary requirement of all such views – that it is a contingent (not a logical) view of the stuff.

6.18 In **Figure Nine**, the HERO’s content is shown in the unshaded box, its own metadata is shown in the grey shaded boxes, and the obligatory metadata requirements it shares with all other recordkeeping objects are shown in black. As with any system of this kind, reports can be specified.

6.19 Like all objects, the HERO can itself be versioned and most of its metadata is (of course) repeatable – the IT equivalent of multiple provenance. In addition, it can inherit and give (by inheritance) characteristics to other objects. This enables an heroic object to inherit metadata (and thus context and succession) from other objects and, in turn, to inscribe context and succession upon the face of successive versions of other objects (including “records”²⁹). It will be seen that the HERO can document anything – an enterprise, an “agency”, a “series” or sequence, a function, an act, an actor, anything. The type of thing it is (the kind of role it fulfils inside the system is specified (e.g. in category type and level)³⁰. Not everything requires heroic context, but records certainly do.

6.20 The HERO can be used to populate any metadata field in one of Bearman’s metadata-encapsulated-objects (BEARMEOs)³¹. The HERO illustrated here can barely manage that – for what it is worth – for seven of the metadata types Bearman listed. The particular focus of these articles, however, has not been how to implement SPIRT, build a BERAMEO, or apply the recordkeeping metadata requirements (that has been almost assumed). These articles are not about that. They are about re-establishing recordkeeping sequences in cyberspace (answering the question, what happened next?). Those relationships are shown here as metadata on the face of the HERO itself (under the heading : Relationships). It is assumed that there will be a similar metadata requirement for the BEARMEO itself and that this cannot be satisfied simply by linking the BEARMEO with a HERO.

Figure Ten
HERO SUPER-TYPE (with system generated metadata excised)

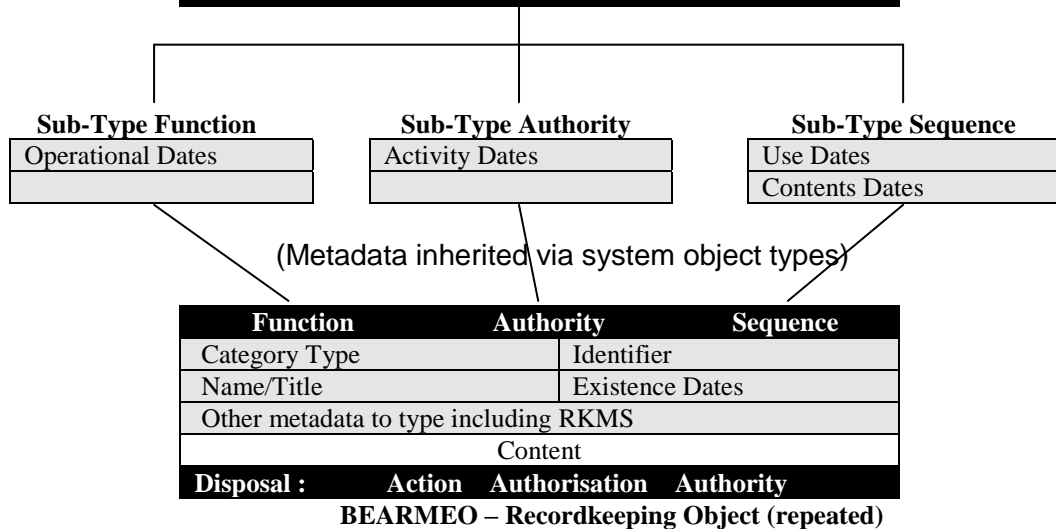
Category Type	Identifier
Reference	Existence Dates
Name/Title	
Alternative Name/Title (Co-Ordinate)	

²⁹ I am placing the word “record” in inverted commas in this discussion to indicate that there is an unresolved issue around whether or not the context is part of the record. This is not unresolved in my mind – of course it is part of the record. In order to participate in the discourse over descriptive standards, however, in terms which others will follow, it is sometimes necessary to speak as if it was not.

³⁰ Within a system the ultimate HERO might be an entity/object standing for the whole enterprise. There is nothing preventing that HERO being referenced, however, to other external HEROs using a general-purpose extensible metadata management schema (GEMMS) – see footnote 8.

³¹ It is assumed that the source of metadata for disposal will be carried within the Function-HERO (for functional appraisal), the Authority-HERO (for structural appraisal), or the Sequence-HERO (for records appraisal).

Alternative Name/Title (Subordinate)	
Author's Notes	Sources
Business Rules	Level
Status (Entity)	Status (Documentation)
Child of	Dates
Interaction	Dates
Predecessor	Date
Successor	Date
Jurisdiction	Dates
Subject	Authority
Sequence/Series	Classification/Function
Abstract (Scope Note) :	
Language (Resource)	Language (Content)
Legislation (Entity)	Legislation (Resource)
Disposal Action	
Disposal Authorisation	--: Authoriser --: Date
	--: Verification --: Notification
Disposal Authority	
--: Authorisation	--: Version --: Record Class
	--: Status --: Sentence



6.21 The proposition that remains to be explored is that HEROs can be used to manage any of the entity/objects outlined in **Figure One** and that, on the principle already outlined, any HERO can be shown to be in sequence with another based on properly managed ownership relationships. It follows that the trace of a (trans)action can be placed in sequence with another by means of ownership relations with HEROs thus sequenced. It will be recalled that, in Part Five, it was demonstrated that the sequencing of documents in a recordkeeping process is but a mimicking of the process which actually organises the (trans)actions – viz. a business process. If all of the elements in a business process were documented as HEROs (or inherited the requisite metadata from one or more HEROs), the work-flow (or contingent structure³²) of the business process would provide the basis upon which ownership relationships (and hence succession relationships) could be captured.

7.0 Are Relationships Ever Actual?

³² In systems terms, workflow has (regrettably) come to mean pre-determined patterns into which actions are forced to fit. There is no reason why the same functionality (with very little modification) could not “workflow” actions as or after they occur – some logging and audit trail functionality already does this. I don’t know enough about it, but I understand there is theoretical work aiming to establish that the whole of human activity actually consists of relatively few types (be they processes, object types, structures, whatever) and that everything we identify in business analysis on the ground is only some variation of one of these common types.

records are documentary materials whose connections with a particular event or circumstance can be established; they may be the intended or unintended result of any human activity involving the management of documentary materials. Relationships with other records and connections with other knowledge is one method whereby connections with event or circumstance may be established; alternatively they can be inscribed on the record.

deliberate records are records whose evidential character results from connections with event or circumstance occurring as the result of deliberate action or intent in actions undertaken as part of a recordkeeping process with that purpose in mind. Such connections may be established by documenting them (recordkeeping metadata registered or inscribed on the record), establishing relationships with other records (e.g. sequencing), or establishing connections with other entities (e.g. creators).

accidental records are records whose evidential character results from connections with events or circumstances occurring without any deliberate action or intent in actions undertaken as part of a recordkeeping process with that purpose in mind. Such connections may be established by testimony or internal evidence.

connections between records and events or circumstances may be established by internal evidence inscribed on the face of the record, by testimony, and/or by documentation; documentation may or may not be contemporaneous with the event or circumstance with which a connection is established.

documentation is the process whereby records of events or circumstances are made and kept; an event or circumstance is documented when a record survives (whether or not this is the result of deliberate action); the probative value of a record is circumstantial and a matter of degree (and may vary depending on whether or not documentation is contemporaneous).

recordkeeping is a documentation method designed to ensure that the connections (relationships) between documentary materials and a particular event or circumstance are themselves documented; it is a deliberate process intended to ensure that records are made and kept.

metadata comprises attributes of documentary materials; metadata which assists in establishing connections with events or circumstances, regardless of whether or not its use for this purpose is deliberate, is recordkeeping metadata.

recordkeeping (evidential) metadata comprises attributes of a record which establish connections with a particular event or circumstance; when deliberately employed for this purpose, it is a tool that supports recordkeeping; it is not the nature of the metadata attribute but its use (deliberate or otherwise) which distinguishes recordkeeping metadata from other kinds of metadata.

recordkeeping (evidential) entities are documentable objects that are (or may be) used to supply or validate (verify) the content or value of recordkeeping metadata; the process of supply or validation may be accomplished via relationships in records; their use in a recordkeeping process is deliberate but an unintended or unselfconscious relationship with documentary materials may also be established.

evidence of an event or circumstance may be supplied by records (or by other means); an evidential record may be the result of a deliberate recordkeeping process but it does not have to be - it may acquire recordkeeping metadata or have established relationships with recordkeeping entities in unintended and unselfconscious ways.

7.01 Can records exist without recordkeeping being the intended result? Yes, they can. A connection between documentary material and an event or circumstance can subsist without deliberate action to ensure it. Evidence is admissible even if it does not come from a formal recordkeeping system deliberately documenting recordkeeping metadata and recordkeeping entities. Accidental records have evidential value without purposeful intent. By the same reasoning, it must also be possible to have an "accidental archives".

7.02 We can observe the truth of this in any court. Documents are admitted as evidence if they are proven. This involves testing their reliability and authenticity. The tests are similar to those which provide the functional specifications for recordkeeping systems, but it is possible for them to be satisfied in other ways - as our courts do every day. Courts do not only admit deliberate records. Without wishing to make a semantic argument, I would say that the documents courts admit are all records, but a mix of deliberate and accidental ones. What we recordkeepers call records are only the deliberate part of that larger species. Although making and keeping may be unselfconscious, the specifications are the same as for deliberate records - but they are satisfied differently. The difference is that intent - the invocation of deliberate action - manifests itself in a recordkeeping system in specific ways.

Absence of system does not mean absence of records or, necessarily of a different kind of intent³³.

7.03 This is no different really from saying that people can get well without becoming patients and that the innocent may sometimes get off without the help of lawyers. In such cases, healing takes place without medicine and vindication is achieved without advocacy. Similarly, evidence can exist without recordkeeping. Documentary memorials can exist without archivists. Knowable recordkeeping (evidential) metadata concerning recordkeeping (evidential) entities is necessary for records to exist (whether accidental or deliberate) but this knowledge does not have to be maintained as a deliberate act within a recordkeeping system. Recordkeeping is sufficient for evidence but not necessary.

Figure Eleven : Axes of Frank Upward's *Continuum*

<u>Recordkeeping</u>	<u>Identity</u>	<u>Transaction</u>	<u>Evidence</u>
Document	Actor	Act	Trace
Record	Agent	Action	Evidence
Archive	Agency	Activity	Organisational* memory
Archives	Organisation	Function	Collective memory
			* individual

7.04 This, unless I misapprehend him, is the point (or a point) of the separation Frank Upward makes in his *continuum model* between "Recordkeeping" and "Evidence"³⁴. We don't do evidence as such, we do recordkeeping. You can have evidence without recordkeeping³⁵. Deliberate recordkeeping acts are not co-extensive with evidence. This separation is particularly relevant to the notion of parallel provenance³⁶. An illuminating example of this is the attitude of some Australian Aborigines to the records of the Aboriginal Protectorates. These records document, inter alia, the forcible removal of children to assimilate them into White society (the Stolen Generation). They are the records of the government agency whose task this was, but they are also evidence of the Aboriginal experience (to some Aborigines, they are "our" family histories). They are "our" records, even though Aborigines had no part in their creation (as that would be understood within traditional notions of provenance).

7.05 The knowledge embodied in recordkeeping metadata exists in human memory without being documented. The evidential value of the content depends upon being able to recall and verify the knowledge. Documenting it is just one way of doing that - prudent and possibly desirable, but not essential. Archival finding aids are like that. They document knowledge about a deposit of records to preserve contextual knowledge about them possessed by their creators (and former custodians) but otherwise in danger of loss if not written down now. The records had evidential value before they were transferred. The "new" metadata is not really new, it is just being documented for the first time. Archivists are not creating this knowledge, it exists before it is written down in a finding aid. It existed in peoples' heads (living finding aids) - the heads of people who didn't have to write it down because everyone knew it anyway who needed to know. It is when the records are transferred elsewhere - into a place where the knowledge would be lost if we didn't put it in a finding aid - that we intervene and participate in records creation by documenting contextual metadata.

³³ Thus, not to split hairs too finely, an accidental record also manifests intent, just a different kind of intent from deliberate records.

³⁴ Frank Upward, "Structuring the Records Continuum Part One : Post-Custodial principles and properties" *Archives and Manuscripts* Vol. 24, No. 2 (November, 1996), pp. 268-285.

³⁵ Let us hope there are not too many instances of recordkeeping without evidence!

³⁶ For another insight into the notion of parallel provenance (as yet only partially developed and inadequately documented) see Michael Piggott and Sue McKemmish, "Recordkeeping, Reconciliation and Political Reality" *Australian Society of Archivists Annual Conference* (Sydney, August, 2002), p. 13.

7.06 In cyberspace, the physical boundaries within which undocumented contextual (and structural) knowledge did not have to be written down no longer operate. It makes sense, therefore, to cocoon e/records into the kind of contextual metadata that, in the paper world, was usually needed only after transfer to an archival repository. Courts are admitting electronic evidence that lacks adequate contextual metadata on testimony alone. This demonstrates the point clearly enough. In the absence of requisite documented metadata, greater reliance must be had on testimony and inference.

7.07 Are any metadata elements unique to the recordkeeping process? Are there any attributes needed for a recordkeeping purpose and no other? I think probably not. Ultimately, the reason for this is that ours is the taxonomy of contingency, not of logic³⁷.

7.08 When we explore the intricacies of recordkeeping, we are exploring the deliberate intent the recordkeeper to capture, manage and preserve evidence - from the point of view of the creator of the system, usually the creator of the records. This is what we have been taught to do. But if contextual knowledge means more than that metadata which is inscribed on the record by the creator, we may have to consider the status of metadata embodying contextual knowledge from other points of view. A's deliberate records may be the accidental records of B.

7.09 The same materials may have evidential value independent of the creator's intent (or at least not co-extensive with it). The intervention of the traditional archivist documents metadata essential to the support of evidential meaning not hitherto captured, but usually this is only from a single point of view, by capturing (or, more correctly, recapturing) contextual knowledge pertaining to one view of creation. Even the multi-provenance approach of the Australian ("Series") System³⁸, does not break this paradigm. It only documents more than one provenance through time; it does not establish coterminous and alternative views of context simultaneously.

7.10 Yet relationships in records are not confined to those comprehended only by the creator, i.e. the recordkeeper's view of the creator. The National Library of Australia brought together letters written by Alfred Deakin and called them the "Deakin Papers". When I was still bewitched by originality, I thought this a very bad thing. If it involves obliterating original order³⁹, I still think so. But I now find my inherent objections to the practice (based on giving the documents a context they did not "actually" have) as distinct from my technical objections (interfering with the order they had in the several archives from which they were extracted) do not hold. Inherently, the Library was invoking what I would now call parallel provenance - recognising that the body of Deakin's outwards correspondence is just as valid a view of the materials as the ones that would have been preserved if they had remained amongst the papers of their recipients. Technical objections to rearrangement of physical materials (especially if that obliterates the original order of physical materials) still hold, but the imposition of a parallel view in addition to that represented by original order can be distinguished.

7.11 An archive of Deakin's outwards letters (his letter book, for example) is a perfectly valid recordkeeping entity. Critics will point out that, while this may be so, I am overlooking the fact that this is not Deakin's letter-book and that that fact makes all the difference. Quite so, it is a difference, in fact, that needs to be documented by carefully crafting alternative relationships in records. A view of Deakin's outwards correspondence created by Deakin himself is different from a view of Deakin's outwards correspondence created individually by

³⁷ See Part 3.

³⁸ See Chris Hurley, "The Australian ("Series") System : an Exposition" in Sue McKemmish and Michael Piggott (eds) *The Records Continuum - Ian Maclean and Australian Archives First Fifty Years* (Melbourne, Ancora Press in association with Australian Archives, 1994), pp. 150-172.

³⁹ I don't know one way or the other whether it did.

his several correspondents. No one is suggesting otherwise. That is why it is wrong to separate physical letters from their original context, without - at any rate - documenting where they came from. It is quite another matter to say that because such materials belong originally in the archives of others, they cannot be viewed as Deakin's outwards correspondence at all. They can exist in both contexts and both can be documented.

7.12 Nothing prevents us from documenting relationships from alternative points of view to that of the creator - not at the expense of those from the creator's point of view, but in addition. This is the essence of parallel provenance. In these articles, I feel I have made some progress in articulating different kinds of relationships in records. Thus far, this has mostly been within the traditional paradigm limiting such relationships to the point of view of the creator. Acceptance of the notion of parallel provenance opens a door into a new world of relationships hitherto not dealt with in the traditional way - viz. relationships divined from other points of view.

7.13 Just behind Circular Quay in Sydney Harbour there is a pocket handkerchief size park. It is called Macquarie Place Park. Off to one side is an obelisk made of golden Sydney sandstone. I sometimes visit it with great joy in my heart. Someone cares enough about it to keep the lettering freshly painted (or, did so until recently). The inscription reads :

This Obelisk was erected in Macquarie Place A.D. 1818. to Record that all the Public Roads Leading to the Interior of the Colony are Measured from it.

L. Macquarie Esq Governor

This is what architects, engineers, and surveyors call a *datum* - a point from which geospacial relationships can be given meaning relative to each other.

7.14 Bourke is a specified distance from Walgett. This can be evidenced without documentation relative to the obelisk in Macquarie Place Park. The position of the two towns relative to each other can also be measured. The verification of these distances and distances to the rest of New South Wales (and hence the world) relies, however, on this knowledge being referenced back to the *datum* in Sydney. Beyond that lies another *datum* and yet another and, ultimately, the point of view represented by the Global Positioning System.

7.15 The challenge for archivists is to knit parallel views of provenance into a referenced conception encompassing contextual knowledge based on more than one *datum* - a conception broader than that of the creator of the records. The essence of being an archivist is not that we undertake this task after the creator creates, but that it is done in addition. Indeed, I would go (and have gone) so far as to say that the work of the archivist is actually part of the creation of the record and that it could be done simultaneously⁴⁰.

7.16 Giving broader context⁴¹ to a limited view already inscribed on or with the records we receive is the traditional work of archivists. Nothing I say here should be taken as devaluing that work. It would be dangerous for amateurs to take these insights as grounds for abandoning or lessening the emphasis on traditional respect for originality, order, and provenance. Nothing said here is intended to demean or undermine traditional approaches. On the contrary, what I am suggesting is that memory can be broadened and enriched by using the traditional approaches of recordkeepers to document parallel views of the meaning of records - views otherwise embodied only in the accidental survivals of informal contextual knowledge.

⁴⁰ Chris Hurley, "The Making and Keeping of Records : (1) What are Finding Aids for?", *Archives and Manuscripts* Vol. 26, No. 1 (May, 1998), pp. 58-77 and "The Making and Keeping of Records : (2) The Tyranny of Listing", *Archives and Manuscripts* Vol. 28, No. 1 (May, 2000), pp. 8-23.

⁴¹ So as to preserve undocumented context and structure.

7.17 This is what I call GEMMS⁴² - which is a perspective encompassing different views of the same context and structure into a single, comprehensive, and broader view. It is not about making up different alternative views of the same records, but of recognising that other views of the materials we handle are possible (and true) and seeking to use our traditional tools to document them. Parallel provenance exists with or without GEMMS, but it remains undocumented by us. To implement GEMMS, we will need to reconceptualise what we mean by relationships in records and develop a new set of implementation rules, but our most pressing need will for an obelisk. The relevance of this to the cultural mission of archivists should be apparent. At a more granular level its relevance to electronic recordkeeping in shared workspace is just as important.

7.18 Nothing is more surprising than the challenge I receive to some of these ideas from Australian colleagues. The archives of Australian colonial development reek with parallel provenance and opportunities to implement GEMMS - something I suggested (to no avail) to the now defunct Australian Council of Archives as long ago as 1986 when I was myself head of the Victorian State Archives.

7.19 The experience of the State of Victoria is typical. It began as "District" of the Colony of New South Wales in 1836⁴³. From 1838 until separation from New South Wales in 1851, it is an integral part of the Colony of NSW. After that it is a separate Colony in its own right until 1901 when it enters a new relationship with NSW (and the other Australian Colonies) by becoming a State within the Commonwealth of Australia.

7.20 How are we to view the official records of the administration of Port Phillip District from 1838 to 1851? Some of them are in Sydney (in State Records Office of NSW) while others are in Melbourne (at the Public Record Office of Victoria). On some matters, the Superintendent of Port Phillip was closely supervised from Sydney, on others he had broad independence of action. In yet a third area, the Superintendent had no jurisdiction over some departments which reported directly to Sydney. The courts were part of the NSW court system, but lower jurisdictions operated without reference to Sydney and their records stayed in Melbourne.

7.21 The technical answer to this question is not difficult. It could, in fact, be handled within Peter Scott's rules for dealing with multiple provenance, given a modicum of co-operative action amongst the government archives authorities of Australia. The records, regardless of their ultimate location, were NSW records until 1851 and Victorian records thereafter. The picture is complicated by what happened after federation in 1901. The Commonwealth inherited certain functions from the Colonies (e.g. immigration, defence, customs). As a result, some prefederation records now reside in the National Archives in Canberra and elsewhere. Included in these are the naturalisation records of Victoria. Some of these inherited records pre-date separation from the parent colony (NSW). Thus, some records began as NSW records, were inherited when the child Colony separated, and were then inherited by the Commonwealth after federation.

7.22 As long as I was associated with government archives programmes, such records as these were documented by each custodian from the *datum* each established as the point of view from which they described records they actually held, essentially without reference to the *datum* established by other government archives. One way of dealing with this would be for them to co-operatively create a single context that we could all use. This was an early idea of Peter Scott's. What government archives thus do in an uncoordinated way is a fractured kind of parallel provenance, but one which could be handled through co-operative implementation of the rules of multiple provenance.

⁴² General-purpose Extensible Metadata Management Schema (GEMMS).

⁴³ Actually, it began as a Police Magistracy and became a District (under a Superintendent) in 1838.

7.23 Another way, which would not even require the involvement or co-operation of the government archives, would be for someone else to establish relationships between the documented entities produced by each government archives programme in Australia using GEMMS rules. Each would then, consciously or otherwise and independently of each other, be contributing to the documentation of the entire context they all share. The GEMMS system would use their data (or, as much of it as was needed) without reference to their use of it in those relationships needed to document the larger whole referenced to the GEMMS point of view.

7.24 Thus, the Port Phillip District, viewed in Victoria as an enterprise from 1838 to 1851 and in New South Wales as a sub-enterprise could continue to be described as such in each system provided GEMMS established a "same as" relationship between the two documented entities from the GEMMS point of view. The GEMMS *datum* would be different to that of Victoria and New South Wales and would need to point only to already documented entities and establish relationships between them. The relevance of this approach to the functions of a government archives authority in a post-custodial age trying to document and manage the recordkeeping hordes of otherwise disconnected agencies are obvious.

7.25 What I proposed in 1986 (taking up Peter Scott's original suggestion) was establishing a fractured kind of GEMMS. It would have meant contributing to a common contextual view of all the government activities of Australia back to 1788. This would have been a context that did not correspond to any of our separate ownership interests. Within it, we could have severally documented what we had to document and the resulting whole would have been a complete picture of otherwise fragmented views.

7.26 Thus parallel provenance ceases to be that when operated on by GEMMS⁴⁴. What appeared to be the legitimate point of view of the Government of Victoria turned out to be a parallel view of the larger picture. But this would have ceased to be an isolated view if the proposal to implement GEMMS had been taken up and Victoria (like the other government archives programmes) had submerged itself into a larger comprehensive contextual view. Similarly, other parallel provenance will, without breaking up and disappearing, be enlarged and enriched upon closer examination under a GEMMS spotlight. When archives programmes give up (or are forced to give up) their partial views of the data they manage and submit to a more inclusive (and accurate) documentation of contextual frameworks than they are singly capable of dealing with, perhaps it can also include the Aboriginal view of the Protectorate records.

Retrospective

R0.01 As the prospective length of this series of articles extended, the editor sought an indication of how many more instalments there would be. This, sadly, will be the last instalment in *the New Zealand Archivist*.

R0.02 I would like to pay tribute here to Rosemary Collier. She is a tough editor. Sometimes unsure (I suspect) what I was driving at in the series overall, she has nevertheless treated each contribution on its merits and insisted on editorial standards of a high order. She never lets anything through to her readers if she herself doesn't understand it. As the author of this series, I have been grateful for being allowed the space to publish - irrespective of whether this came from faith in me or desperation for copy.

R0.03 When Rosemary asked me : "How long will it last?" I was reminded of Pope Julius II asking Michelangelo : "When will you make an end?" And, in that spirit, I have replied : "When I am finished" and "How long is a piece of string?" It may have been better to ask :

⁴⁴ Always acknowledging that one man's GEMMS is another man's fractured parallel provenance.

"How long is a shelf of books?" The beginning and the end of the series have always been clear in my head. What has happened is that each time I approached the last instalment (the end of the shelf) I have inserted a fresh intermediate volume - thus extending the length of the books along the shelf.

R0.04 The later instalments will not now appear in New Zealand. For this final issue, I felt I should provide my NZ readers (if any) :

- a. the overall road-map so you can see where it will end up, and
- b. an explanation of some of the detours I have made along the way.

R1.00 The Road Map

R1.01 The articles are intended to be a contribution to the recordkeeping discourse emanating from the theoretical position first outlined by Peter Scott. He proposed applying registry methods to the description of archives, so that, instead of describing the end-product of a recordkeeping process, the archivist would document the process itself. This would provide a context in which surviving records could be kept and understood as they were originally intended to function. Instead of being the mortified artefacts of a defunct process, archives would be sustained on a life-support system - viz. the preserved system in which they once lived. The corollary of this approach is that records can also be made and understood in that way in the first place.

R1.02 The Australian system was devised in the workplace to solve seemingly intractable difficulties in applying traditional archival theory to the treatment of modern records flowing into what was then the Commonwealth Archives Office at relatively short intervals after their creation. The CAO was once unkindly described as a records centre in search of an archives. They were unable to create viable work processes based on existing theory, so they developed a new theory to be the foundation of work processes that would be viable.

R1.03 The theory is simply this : the point of view from which archives are described should be identical to the point of view from which the records they once were have been created. The Archives must re-establish, for the materials it accessions, the contextual world in which the material was created. This has to be done before a settled (anachronistic) view of the context - the *fonds* - has had time to form (before the dust settles). Since a record is time-bound and the contextual world in which it exists changes, an archives programme must act as a kind of "registry" for all the contextual frameworks in which transferred records were (and have yet to be) involved. Materials deposited in the archives need not and should not be described any differently from un-transferred materials created in the same context except as to location.

R1.04 This apparently meant describing more, at both the level of context and of recordkeeping activity, than was strictly necessary to depict transfers or sustain search room discovery⁴⁵. Such additional effort has always appeared wasteful to those whose aspirations for description extend no further. It also meant that registry techniques can be used to track changes in context and structure throughout the period in which contextualising activity takes place. In short, it meant that records should be depicted synchronistically (to use Scott's phrase). This is multiple provenance : a series may belong to more than one creator at different times)⁴⁶.

⁴⁵ The additional work required is more apparent than real. It turns out that much of the contextual data was always part of archival description. Suck out data about organisational structure and , even more significantly, function and - apart from interminable lists, there is little left of a traditional finding aid.

⁴⁶ The idea that contextualising activity might take place before the commencement of the recordkeeping or

R1.05 The Australian system decomposes context and structure by dividing context from recordkeeping. Context and recordkeeping can themselves be further deconstructed - even in some implementations still trudging on today. Theoretically, we have moved on to consider other kinds of entities (principally functions) which are correctly seen as emanating from both context and recordkeeping processes. Part of the purpose of these articles has been to explore the relationship between recordkeep[ing] processes and business processes in the construction of entities needed to manage electronic records.

R1.06 At first, all this appeared to be merely an original and useful contribution to the archival theory of description - a better way of dealing with dead records consigned by business into the mortuary of archival care. There was no need to apply it to "current recordkeeping" because, in the paper world, pre-archival phases adequately made and kept records. It was only after they had been wrenched from their own original context that Scott's methods (representing an improvement only on traditional approaches) became useful in managing archives.

R1.07 Implicitly rather than explicitly, early applications of Scott's system required the capture of significant quantities of data about the business in which the recordkeeping processes being documented operated. Scott emphasised a very proper care for the preservation of details about how archival records had been created and kept - the recordkeeping process - but he also placed a new emphasis on details about the inter-connection between recordkeeping and the business process. We have since come to see more clearly that the separation of recordkeeping and business, which Scott challenged without demolishing, is a false dichotomy.

R1.08 The potential for Scott's approach to move back into the record-making phase and the emphasis on connecting recordkeeping with business are two strands which have led practitioners and theorists to what is sometimes called the *continuum* approach. This approach has many interpretations amongst its supporters and opponents. The significance of it for this author is that it affords a pathway to solving the methodological problems associated with electronic records.

R1.09 The first and simplest of the solutions afforded by applying *continuum* thinking to Australian methodologies is the potential for contextualising e/records from birth, so that

- a. essential knowledge (metadata) about context is attached to or associated with records from the outset and not left to the archival phase,
- b. contextualisation no longer needs to be based on location, and
- c. the record is correctly structured from the outset to contain (or link to) the contextual metadata it needs to survive as a record.

In the paper world, it was possible to wait until archiving. In cyberspace, this must be done at once or not at all - later will be too late. It is hardly surprising that a system of archival description based on registry techniques should prove itself to be very adaptable to solving this problem.

R1.10 More significant is the potential of the *continuum* approach to provide an answer to the most vexing of problems related to e/records. It is easy enough to identify many of the key concepts of traditional archiving in cyberspace - organisational entities, documents, items (digital objects) of all kinds. Even functions, so far as they were (and even now are) understood, can be dealt with. Dealing with them provides certain unique difficulties related to originality and identifying the features of a *record* that must be preserved. In the paper

business process commences, after it has ceased, and beyond the boundaries of its immediate creation is a later development.

world, the original artefact (the physical thing) was what we kept. But originality in physical space was only a method for achieving authenticity. In cyberspace, we are concerned with finding new, more appropriate, methods to authenticate the records we need to preserve.

R1.11 The more difficult problem is how to identify a series in cyberspace. This has proven to be so difficult that some have even doubted whether electronic series exist at all. The purpose of "Relationships ..." has been to demonstrate that electronic series can and should be made and kept as an integral part of e/recordkeeping. This is done by discarding the traditional idea of what a series is : viz. the product of a recordkeeping process. In its place, comes the new proposition (equally applicable to physical as well as e/records) : viz. a series is the reflection (the documentary replication) of a business process. It follows that series can exist even if there is no recordkeeping process, though the survival of these "accidental" records (see R2.10 below) might be more problematic than the survival of "deliberate" records which are sustained by recordkeeping functionality.

R1.12 The final instalment, whenever and wherever it appears, will return to the proposition put forward in Part 1 of the series. That, if you recall, was that (in recordkeeping) succession relationships are really ownership relationships in disguise. The example used in Part 1 was the succession of agents (or agencies) - viz. the record-makers themselves. Two record-makers succeed each other when one hands over to the other the carrying out or ownership of a function (for example).

R1.13 In the final Part, I intend to demonstrate that two e/documents or digital objects succeed each other in a recordkeeping sequence when one hands over to the other the carrying out or "ownership" of a (trans)action. The *sequence* thus forged emerges from an actual business or recordkeeping process and establishes the evidential relationship which is (and always was) what makes a record what it is and makes it the thing that we must keep. Using registry-based methods outlined by Scott enables us to model how such simple artefacts from the business process can be layered into ever more complex collectivities - docketts aggregating into files and then into items and then into series and then into *fonds*. The same recordkeeping rules and methods can be used to document all this because the same business methods lie at the heart of it all. The e/series may be very unlike the physical series quite simply because they are each merely instances of a larger entity-type. In the physical world, we are accustomed to a divergent range of series-types (docketts, files, enrolments, registers, indexes, notched sticks, clay tablets, monumental archways, and so on). There is no reason to suppose that an e/series will conform to any one of these divergent sub-types. What all the sub-types have in common are the characteristics (yet to be satisfactorily delineated) of the series super-type of which they are all instances.

R1.14 Scott's system was built on a perception that to properly and efficiently describe archives, you had to document relationships between identifiable components in the process by which they were made. Potentially, his approach could always have been moved back from the keeping into the making process. You can identify and deal with series in cyberspace by doing just that. Identifying the characteristics that all series have in common - of the series super-type - and using this knowledge to provide a framework in which e/series can be identified, understood and managed is one of the main reasons for writing "Relationships ...".

R1.15 The other is to demonstrate the pertinence of Scott's approach in managing documentary evidence within organisations. Just as the method is capable of conferring a government-wide perspective over the archives of an entire sovereign administration, it can also confer an enterprise- or societal-wide perspective on recordkeeping within an organisation or a community. The need for this, in managing e/records, is acute. Traditional recordkeeping practices have broken down. Organisational structures are so fluid as to be almost incapable of deploying and sustaining robust and enduring recordkeeping tools. Yet

the need for enterprise-wide evidence management remains. This can be done, I believe, at the sub-enterprise level by super-imposing a recordkeeping schema utilising the methods Scott introduced for an entirely different purpose 50 years ago.

R1.16 Whatever the nature of the e/series, its fundamental feature will be the sequencing of e/stuff in a way that enables a view of the stuff to be taken which represents a structure based upon the relationships between component incidents and entities in a business transaction. What we have traditionally understood as recordkeeping processes were only an attempt to mimic business processes for the purpose of forming the unorganised detritus of the process into a documentary record of events - see R2.09 below. In cyberspace, as in physical space, the organisation (i.e. the structuralisation) of the digital objects involved in a business process must occur at source.

R2.00 The detours

R2.01 Scott's first article illustrated what came to be called the "series system" approach to archival description. I prefer to call it the "Australian system". An interesting discourse could be written about what has become of this approach in Australasia. Scott's original ideas have been developed (both in theory and in practice) so that they no longer reflect the raw expression that he gave to them. Has this development been for the better or the worse? Well, that is what the discourse we do not yet have would need to be about.

R2.02 For what it is worth, my own view is that Scott's methodology is not practiced anywhere in Australia and New Zealand (that I know of) in the form in which he gave it to us - let alone in conformity to the theoretical developments which have occurred since. Like some barren religious practices, the rituals of the Australian system, the incantations and ceremonies, are repeated without comprehension of their meaning and purpose. Subsequent developments, principally the dumbing down of the methodology to deal with collection management only, has been done by people who have no longer a proper understanding of Scott's underlying significance and who have violated the principles of the Australian system without realising the difference between its purpose and Scott's method.

R2.03 The theoretical developments, on the other hand, have taken the underlying principles of the Australian system as articulated by Scott in the opposite direction from current practice. It would be interesting to know what Peter himself thinks of all this, but ultimately unimportant - no more important than knowing Darwin's views of subsequent developments in evolutionary theory. We now understand better, possibly better than Peter Scott himself did at the time, what the implications his system are and this brings a deeper, more appreciative, and more exciting understanding of his original conception. But because this theoretical development has taken place in the academy and outside the workplace, its implementation phase has been somewhat neglected.

R2.04 That being so, it was necessary to restate and to reconstruct some of the assumptions underlying the application of the Australian system when seeking to develop a larger appreciation of its potential use in solving the problems of e/recordkeeping. The great danger was that the proffered solutions would be read down into the context of the flawed or limited understanding of the system by its present practitioners.

R2.05 Without tracking back over all the published instalments, here then is a brief rehearsal of the detours taken so far :

R2.06 Part 2 (Winter 2002) began to unpick the notion of "ownership". At its most basic, this reflects the attack on traditional notions of provenance I began in 1995 in my article entitled "Problems with Provenance"⁴⁷. The idea is that the provenance of series as understood by archivists actually disguises much more complex ideas about the relationships between series or sequences and other entities (as well as relationships between other entities with each other). **Figure One** which appears in that Part is a fundamental (though I would not say complete) analysis of the different kinds of context a series/sequence may have and a deconstruction, underneath the *fonds* and the series to show how structure, agency and function can contextualise records at the sub-series level. Organisations, enterprises, or jurisdictions are deconstructed to the level of action which can be formed into sequences based on "ownership" relationships in the manner described above. It is suggested that each of these relationships involves a good deal of complexity to be unravelled and articulated before the system can be made to work effectively.

⁴⁷ Chris Hurley, "Problems with provenance" *Archives and Manuscripts* November 1996 (vol. 23, no. 2), p.253.

R2.07 Part 3 (Spring 2002) dealt with the important nature of taxonomies in the Australian system (and as they should be in recordkeeping generally). The key distinction is between logical hierarchies - the fundamental method of the bibliographer and taxonomist - and the contingent approach to hierarchy that is fundamental to recordkeeping. Because recordkeeping involves documenting what actually happened instead of what should have happened, and because a relationship is never implicit in an attribute, a recordkeeping taxonomy cannot predict what is yet to happen and cannot, therefore, be based on logical definitions.

R2.08 Part 4 (Summer 2002) developed this idea by dismissing certain published misconceptions about how "series" could be dealt with in cyberspace. The nature of the relationships that have to be formed and documented before anything like a series can be identified, let alone described, was outlined. It is clear that in cyberspace it is likely that documents or objects will belong to more than one series or sequence (simultaneously, not just in succession). Scott gave us multiple provenance to solve the problem of changing ownership through time. Simultaneous multiple provenance, a notion he toyed with but did not fully develop, will be needed to manage e/records. In Part 4, I set out why this is not new and that this was true in the physical world as well, but traditional ideas of archival description served to disguise the fact. Indeed, one could almost argue that paper recordkeeping processes were little more than a selection from amongst the myriad evidential sequences left by business and the imposition of that selected view over the documentary detritus of the business transaction - to the exclusion of all other views. All that has changed is that e/recordkeeping will enable us to preserve more of the sequences to which documents/objects belong than it was possible to do in physical space.

R2.09 Part 5 (Autumn 2003) provided a summary of the preceding instalments and a discussion of how we need to rethink the distinction between recordkeeping processes and business processes. It is a mistake to identify the recordkeeping process *per se* as the basis of serialisation. In the physical world, recordkeeping processes gave form and appearance to records so we supposed that sequencing occurred as a result of the recordkeeping process. But in reality the recordkeeping process was only mimicking the business process (and it was a pale impersonation at that), giving form and substance to relationships between the documentary detritus of a business process which the business process itself did not inscribe on the record. In cyberspace, automated business processes have the potential - not yet fully realised - to document relationships between objects/ documents so the need for separate recordkeeping processes will fade away.

R2.10 Part 6 (Autumn 2004) used the descriptive standards being issued by the International Council of Archives to illustrate, by means of ridicule, how an outdated and inadequate theoretical base is hampering international attempts to deal with archival description of e/records (and hence, by extension, of all records). It introduced the idea of perspective. The Australian system is about nailing down the context of anything from a simple document/object up to an entire organisation, jurisdiction or enterprise. It does this by documenting relationships. It follows, since its taxonomies cannot be logical, that no implied relationship can be allowed to contaminate the entity definition or the relationship type. Anything can be related to anything else and usually is. A theoretical model for a universal entity type - Hurley's Enduring Recordkeeping Object (the HERO) - was outlined.

R2.10 Part 7 (Winter/June 2004) developed further the notion of contingency by applying a similar analysis to relationships themselves. In a subsequent part, it was intended to put forward the relational equivalent of the HERO - viz. a theoretical model for a universal relationship type. The point was made that recordkeeping does not depend on a deliberate intent to create records. This theoretical exposition is not simply an exhortation about what you must do to keep records. Records will be kept anyway. The analysis deals with how records are kept, whether deliberately or accidentally, and is both :

- a. a description of what goes on when documentary materials become

- records (evidence) without deliberate intent, as well as
- b. a theoretical proposition about recordkeeping functionality that can be rendered in machine-readable form.

By understanding this analysis, it is proposed, you will be better able to keep deliberate records if that is what you want to do. Another aspect of perspective management, the General-Purpose Exstensible Metadata Management Schema (GEMMS), was alluded to. It too was to be the subject of a subsequent instalment.

R3.00 Conclusion

R3.01 That outlines where I am and where I think I have been. I hope some of you will follow me when these ideas are developed further in another place. In any case, may I take this opportunity to thank *The New Zealand Archivist* for providing me with space for this much already.