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DOCUMENTING ARCHIVES AND OTHER RECORDS¹

Chris Hurley²

This is an unpublished work that has been rejected by most of the English-speaking archival journals outside of Australasia. It began life as the second half of a valediction to over 30 years of work on this subject by myself and others that was written, in part, to mark the 40th anniversary of Peter Scott's seminal 1966 article in *American Archivist* on the Australian "series" system. Considerable time was lost in seeking a publisher and it is now appearing (unpublished) on the RCRG site of the [Records Continuum Research Group](#). The first half of the valediction is under consideration for publication in another journal.

In [Part One](#) of this article (i.e. the second half of the valediction), I use perceived flaws in the [multi-level](#) approach to standardisation of descriptive practice internationally in order to reference ideas about the modelling of archival data and a systematic approach to recordkeeping which is loosely described as the [continuum model](#). This includes an examination of the distinction between [attributes and values](#) when designing descriptive entities. A particular emphasis is given here to freeing documentation activity from a single point of view and employing methodologies that permit records to be multi-contextualised. The significance of [multi-layered description](#) by which attributes but not values are inherited – a point that has been made by this author several times before – is restated.

In [Part Two](#), this approach is taken to its logical conclusion with an explanation of the significance of [scaleability](#). As in Part One, the use of a relational model to realign the work of standardisation is explored. The threads of the argument are drawn together in a proposal for a [reference model](#) to be used in future work on the standardisation of description. The argument concludes by linking proposed improvements in the way archival standards are written and presented with emerging [recordkeeping requirements in cyberspace](#) where, it is hypothesised, new methodologies based on these insights can support the abiding archival mission of making and keeping records.

Use is made throughout of examples drawn from old-fashioned docketing systems. Readers unfamiliar with such systems may wish to consult the [Postscript](#) before embarking on the article proper. Substantial portions of Part Two were used in 2008 in the submission from Australian Society of Archivists to the ICA's Committee of Best Practices and Standards concerning a draft *Standard for Describing Institutions with Archival Holdings* (ISDIAH).

Part One : A Confusion of Standards

Archivists multiply provenance when deconstructing a *fonds* into "levels of arrangement". At every level authorship, control, and context must be ascribed. The author of a letter, the "creator" of series, and the provenance of the *fonds* are usually different. On that view, perfectly legitimate under the multi-level rule (**Figure One**), there may be two or more simultaneous "creators" of any entity – one direct and another vicarious.

Creation of one kind or another occurs at every level of aggregation. Under the ICA's descriptive rules, the series-creator need not now be the creator of the *fonds* or *sous-fonds* to which the series belongs. Files, items, and documentary objects all have authors. The distinction between the creator of a *fonds* and the author of a document is the difference in value of the data populating the attributes. Any "unit of description" at any level may be said to have a creator – ISAD(G) rule 3.2.1. Creation, of course, has a particular meaning in

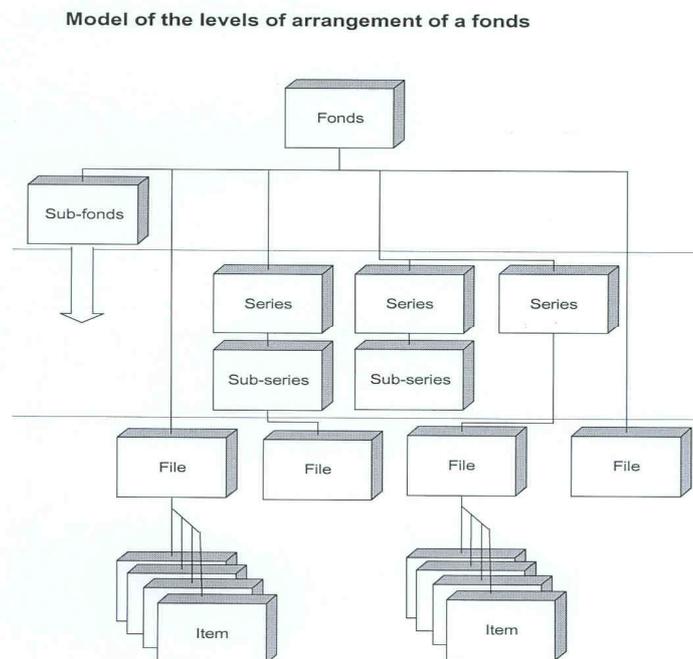
¹ Many of the citations are available on the Records Continuum Research Group (RCRG) website at <http://www.sims.monash.edu.au/research/rcrg/publications/index.html>. Rather than include this in each relevant footnote I indicate where this is the case by the symbol ★

² I would like to thank Glenda Acland, David Bearman, Terry Cook, Adrian Cunningham, Barbara Reed, Sue McKemmish, and Frank Upward for their comments and assistance. Parts of this article first appeared on the ICA Listserv as commentary on the proposed Standard for Institutions with Archival Holdings. Portions were also incorporated into the response to this draft from the Australian Society of Archivists' Descriptive Standards Committee.

relation to records, especially for archivists. A descriptive entity that is itself a creator (an authority record) or a function will not have a creator in the same sense. But they may have relationships with other entities that establish a similar connection with those other entities – the “controller”, begetter, or sovereign authority over an organisation or business unit, for example. If “creation” is simply a variant form of a type of relationship that descriptive entities of all kinds have with other entities and not a relationship that uniquely applies between records and a records-creating entity, then some larger relationship-type is needed here of which records-creation, ownership, control, etc. are merely instances.

The file’s creator may or may not be identical to the series’ creator. The file may be said to have been created by the action officer who does the work and compiles the documents, by the manager of the series it belongs to, by the creator of the *fonds* or *sous-fonds* to which that series belongs, or by the corporation exercising ultimate control over disposal and access. As with a Russian doll, each larger entity can be opened up to reveal similarly shaped but smaller versions of itself within. Each sub-entity is contained within a larger entity-type with identical attributes having different values. Yet definitionally the ICA Standard recognises only the *fonds* and the *sous-fonds* as having the attributes of provenance³.

Figure One⁴



This cannot be correct unless provenance itself is defined as a property unique to the process of creating a *fonds* or *sous-fonds* and excluded from “creation” of any other kind of documentary entity - the implication being that a series, while it can have its own creator, can have no “provenance” outside the *fonds*. How then does ICA define provenance?

Provenance. The relationship between records and the organizations or individuals that created, accumulated and/or maintained and used them in the conduct of personal or corporate activity.⁵

Record is the creation of “an organization or person” and a creator of record(s) is a “corporate body, family or person” that creates records. A corporate body is any

³ It is just possible that the phrase “some other relationship arising out of their creation” in the ICA’s definition of series is intended to include the notion of “organically created and/or accumulated and used” in its definition of the *fonds*. But this would be twisting logic and syntax beyond what is appropriate in an international standard.

⁴ International Council on Archives (2000), *ISAD(G) : General International Standard Archival Description*, 2nd edition (Ottawa, 2000), Appendix A-1 (p.36). Available at <http://www.ica.org>

⁵ International Council on Archives (2000), *ISAD(G) : General International Standard Archival Description* op cit., p.11.

“organization or group of persons” having a name that “acts, or may, act as an entity”. There is nothing here that defines the creation of a *fonds* as conceptually different from the creation of any other kind of documentary entity - nor should there be. Under ICA’s own definitions, therefore, a series can have a provenance and a single documentary object can have provenance that is not identical to (but need not be different from) the provenance of the item, series or *fonds* to which it belongs but is instead a reflection of its authorship and use. I suspect ICA intended person to be unit within a family that creates a *fonds* but the definition does not preclude persons acting as agents of formation or control within a corporate body (or a family) – i.e. as agents of action whose role may or may not be the formation of records but whose relationship to a single documentary object is primarily to do with the transaction of business⁶.

But multi-level description makes entities component parts of larger entities instead of treating them as separate entities bound by relationships. A file is an aggregation of letters and memoranda created during successive transactions. It is a debased form of docket⁷ – the docket being an aggregation of documentary objects pertaining to a particular transaction or successive (sequential) instalments in a transaction. The file is a container for scraps of dockets pertaining to the same process or subject or recording dealings with the same party. When files are organised into a sequence enjoying a common provenance, belonging to a *fonds* or *sous-fonds* to which it, along with other sequences of a similar provenance, belongs, entities at every level, from the single document up through containers and series, are held to share the provenance of the *fonds*. But a file subsuming many dockets is itself a sequence (or sub-sequence) – a method for organising transactional records (the proto-dockets) into a sequence that is the organisation given to the contents of the file. In a true docketing system, without files, the transactional record is placed into two sequences (or sub-sequences if the docketing mechanism itself is regarded as a sequence in its own right). Dockets are registered numerically for filing but indexed and top-numbered into virtual sequences together with letter books and memoranda for evidential and retrieval purposes⁸.

The Australian approach⁹ attributes provenance to entities that, when combined to display those which share a common creation or purpose, produce collectivities whose relationship with the component entities need not be one of containment. A documentary object is seldom (if ever) an isolate. It is a record precisely because it is related to other things and it is those relationships that must be preserved. One way of keeping records is to document relationships through description. Most relationships are one of two kinds; recordkeeping objects (not just documents but entities of all kinds) may be said to :

- precede or succeed each other (**sequencing**), or
- belong to, form, control, emanate from, or “own” each other (**provenance**).

Any action that places entities into relationships with each other (whether the placement is physical or virtual) is an instance of sequencing and any action of formation, control, or use (directly or vicariously) confers provenance. Multi-level description focuses on the second aspect of relationship building (belonging) and is stated thus :

If the *fonds* as a whole is being described, it should be represented in one description ... the parts ... may be described separately ... The sum total of all descriptions thus obtained, linked in a hierarchy ... represents the *fonds* and those parts for which descriptions were made...¹⁰

The hierarchy recommended is the product of applying four multi-level rules :

1. present complex descriptions from broadest to more specific;

⁶ The common law also recognises a situation where a person is a corporation – the corporation sole.

⁷ For those unfamiliar with registration and docketing systems a descriptive [Postscript](#) is added.

⁸ A good nineteenth century docketing system provides the paradigm for virtual series employing multiple provenance that we will need to properly document electronic records.

⁹ Chris Hurley (1994)★, “The Australian (“Series”) System : An Exposition” in *The Records Continuum : Ian Maclean and Australian Archives First Fifty Years* edited by Sue McKemmish and Michael Piggott (Melbourne, Ancora Press in association with Australian Archives, 1994), pp. 150-172.

¹⁰ International Council on Archives (2000), *ISAD(G) ...*, op cit., paragraph 2.1

2. including information at the “appropriate” level;
3. linking descriptions to the “next higher” unit of description;
4. no repetition of information at higher levels¹¹.

The view implicit here - that all units of description other than the *fonds* itself are component parts and that the *fonds* is independent (not a component part of something else) – is a custodial one. Dust must have already settled and a descriptive point of view formed because it is apparent, from the definition of a *fonds* as the :

... whole of the records ... organically created and/or accumulated and used by a particular person, family, or corporate body in the course of that creator’s activities and functions¹²...

that any *fonds* (e.g. the papers of a person) can be a *sous-fonds* from another point of view (e.g. the papers of the family or families to which the person belongs by birth, marriage, adoption or, these days, by surrogacy).

The anterior characteristics of a description of documents created by Janet Smith cannot be fixed as those of a *fonds* or a *sous-fonds* until the curator takes up his descriptive pen and determines how he is going to portray them. They may be viewed as one or the other (or both). It is curatorial custom, not the circumstances of their creation, that confers upon Janet’s documents one status or another. The archivist portrays *his* truth not *the* truth. Until then, Janet’s papers may viewed as a Janet Smith *fonds* in their own right, as a *sous-fonds* of the Smith Family Records, or as a Janet & Edgar Jones *sous-fonds* of the Jones Family Records (by virtue of her marriage to Edgar). They might be part of the Wonderly Estate Archives if Janet and Edgar purchased a landholding and left their personal papers in the Wonderly muniments room when Janet sold it after Edgar’s death. Supposing that the Wonderly Estate was subsequently acquired by Conglomerate Holdings, Janet & Edgar’s papers might ultimately make a *sous-sous-fonds* of Conglomerate’s Archives or, supposing Conglomerate discarded these personal documents, been sent to a local record office where they now reside as the Janet & Edgar Jones Papers.

Descriptive archivists who do this privilege the relationship formed between a unit of description and the place where it ends up. Logically, Janet’s documents might be described as belonging to any of the following :

- F.100 Janet Smith *Fonds*;
- F.101 Smith Family Archives (Janet Smith *Sous-Fonds*);
- F.102 Jones Family Archives (Janet Smith *Sous-Fonds*);
- F.103 Jones Family Archives (Janet & Edgar *Sous-Fonds*);
- F.104 Jones Family Archives (Janet Smith *Sous-Sous-Fonds*);
- F.105 Wonderly Estate Archives (Janet Smith *Sous-Fonds*);
- F.106 Wonderly Estate Archives (Janet & Edgar Jones *Sous-Fonds*);
- F.107 Wonderly Estate Archives (Janet Smith *Sous-Sous-Fonds*);
- F.108 Conglomerate Holdings Archives (Wonderly *Sous-Fonds*);
- F.109 Conglomerate Holdings Archives (Janet Smith *Sous-Sous-Fonds*);
- F.110 Conglomerate Holdings Archives (Janet & Edgar Jones *Sous-Sous-Fonds*);
- F.111 Conglomerate Holdings Archives (Janet Smith *Sous-Sous-Sous-Fonds*);
- F.112 Janet & Edgar Jones *Fonds* held by the Pixelated Record Office.

If the last of these hypothetical scenarios is what actually happened (separation of Janet and Edgar’s papers from the Wonderly Estate Muniments and their deposit by Conglomerate in a local record office), some would hold that F.112 is the true *fonds* and the others merely unrealised or discarded possibilities.

If simultaneous multiple provenance is allowed, Janet’s documents can be legitimately attributed to all 13 entities listed above provided the concept of “creation” is variegated into much more sophisticated ideas than is generally allowed and links are formed vicariously with creators of broader aggregations. A series of Janet’s letters (depending on whether they remained as a discrete sequence throughout or became intermingled or intersorted with her husband’s correspondence or some other documents) can be attributed as belonging to

¹¹ Ibid., paragraph 2.2

¹² Ibid., Glossary

1. The creator (Janet & Edgar) amongst whose records the series ended up (F.112) either as a series of that *Fonds* or as a sub-series.
2. The creator (Conglomerate) amongst whose records the series ended up immediately prior to deposit with a custodian (F.108 – F.111).
3. The creator (personal, family, or estate) with whose records they were conjoined (F.100 – F.107) either as a series, sub-series, or sub-sub-series.
4. The unit (Conglomerate) which subsequently took over management of the series after the creator ceased to compile them (F. 108 – F.111) – same as (2) above.

Under the multi-level rule, as it was originally promulgated in ISAD(G) 1st edition, there was a dotted line between the *fonds* level and levels below it. Michael Cook sought to persuade us that this clarified some difficult problems by distinguishing the point at which the describer chooses to represent the records being described separately from the *fonds* or *sous-fonds* wherein the identity of the creator of the records is also to be found - i.e. the agent of creation must be described above the dotted line, within the *fonds* but outside the series. This dotted line has subsequently disappeared and has been replaced by two unbroken ones, the significance of which is not obvious (or, at any rate, not stated). The same sequence of letters accumulated by Janet Smith can be regarded as a :

- series belonging to the Janet Smith *Fonds*,
- series within the Janet Smith *Sous-Fonds* of the Janet & Edgar Jones *Fonds*,
- series belonging to the Edgar & Janet Jones *Fonds*,
- sub-series of Family Letters within the Edgar & Janet Jones *Fonds*.

Under the multi-level rules, the first and second show Janet as creator. The third and fourth can only be created by Janet & Edgar Jones (a single entity comprising two individuals like Gilbert & Sullivan).

The relationship between the letters and other units of description (if authority records and functions can be so termed) depends upon the choice made about whether to treat persons, families, partnerships, estates, or corporate bodies (or functions, processes and activities) as the focus of a *fonds* or a series. Why, custom apart, should one possible view be privileged over all others? Even custom must have some rational basis. If only one view can truly portray provenance, then that relationship (whatever it may be) can be so designated and all the others characterised differently. Why do they have to be suppressed? If applying true archival principles means the correct view of Janet's letters is :

- S.900 Sub-Sub-Series of Letters Created by Janet Smith (P. 852)
 - ▶ belonging to S.901 Sub-Series of Correspondence of Janet & Edgar Jones (P.756)
 - ▶ belonging to SF.902 *Sous-Fonds* of Records from Wonderly Estate (A. 523)
 - ▶ belonging to F.321 *Fonds* created by Conglomerate Holdings (O. 289)

and we adhere to a local rule of describing only what we actually hold, our description must be-

- S.951 Series of Letters Created by Janet Smith (P. 852)
 - ▶ belonging to F.348 *Fonds* of Janet & Edgar Jones (P.756 & P.852)
 - ▶ transferred by Conglomerate Holdings (O. 289)

Such contortions of mind and pen are made necessary by implementation rule 2.2.1 of ISAD(G) : by the necessity of treating Janet's letters as part of something else. If, in terms of belonging, we abandon that requirement, and simply represent Janet's letters as a series (not as a subordinate component of anything) and then establish as many other relationships as we please (within the bounds of true context) we can privilege whatever we like without suppressing other views.

Attributes and Values¹³

Correctly understood, the characteristics or attributes of an entity are derived or inherited from a larger entity-type within which it fits but not the values of the attributes. A document sub-type inherits characteristics but not necessarily its values from the docket, file, series, or

¹³ I am sure that this insight comes from David Bearman but I am unable to cite a specific instance of where I got it from – maybe from something published or maybe in conversation. In any case, it would be ungenerous not to acknowledge the debt here. See also Chris Hurley (1995A) ★, "Ambient Functions : Abandoned Children to Zoos" *Archivaria* No.40 (Fall, 1995).

fonds to which it belongs – in addition to specific characteristics belonging to it alone. The ICA's implementation of multi-level description implies the opposite, viz. that values documented at the "highest" level may be inferred at every level below it as if the component parts of a *fonds* are sub-categories not entities in their own right. This view of archival description fits with dangerous ease into object oriented architectures now being applied to document management. They too rely on inheritance of attributes by sub-types from super-types. This underlying logic is the basis of good system design work. Its misapplication to archival description derives from bibliographic classification and librarianship. The multi-level rule suits the design of systems for the management of records but not for the population of such systems with data about the records themselves.

It is the attributes of recordkeeping entities that are in logical trees and inherited downwards, not values. In classification, however, e.g. in the treatment of linguistic terms and species, the definitional values of the higher level entity are transmitted to the lower according to a logical rationale. In a logical tree, apples, pears, and oranges share common characteristics with all fruit. The definition of fruit need not be repeated in the description for an apple. It is enough to say that an apple is a sub-category of fruit to know that apples share the defined characteristics of fruit with pears and oranges. Logical hierarchies in recordkeeping exist because a record and an accumulation of records will have certain attributes in common – name and dates fields, for example. The characteristics or attributes of all recordkeeping entities are scaleable upwards to those of a single [Universal Recordkeeping Object](#) (URO) that bestows identical attributes on all sub-types at all levels. But the values populating identical characteristics will vary at each level. A record will not have a name and dates with the same values as the accumulation to which it belongs. There is no logical relation between the values of identical attributes at different levels (the values are not inherited). Values are contingent upon circumstances (and the population of attributes by the recordkeeper). A hierarchy is formed by relationships documented between entities and the rule-base that determines how those relationships may be viewed.

The sub-type/super-type relationship between recordkeeping entities follows (or should be allowed to follow) strict logical principles when drawing entity-relationship diagrams. A series can be viewed as a sub-type of a *fonds* if all of the attributes of a *fonds* are inherited by a series. Provided the attribute definitions remain consistent, a *fonds* might derive the values for some of its attributes as aggregations of data imported (auto-populated) from characteristics of its sub-entities. The earliest and latest dates of component series, for example, could be used to generate the first and last dates of a *fonds* but archivists would not allow this to happen because the dating of a *fonds* is based on considerations not identical to the dating of sequences within it and because the commencement date of a sequence that pre-existed the formation of the *fonds*, for example, could not be used to date the later *fonds* into which it is incorporated. Since it is evidently not the case that the value of attributes in the hierarchy are simply derived by aggregating data from corresponding attributes at lower levels within the hierarchy, and almost nothing is said in the ICA standards about system design, the inclusion of the "multi-level rule" in standards for archival descriptive practice probably does more harm than good. If, however, by articulating it, the ICA has uncovered a deep-seated archival misapprehension, a professional inability to understand that the *fonds* and the sequence are simply instant sub-types of a more universal recordkeeping super-type, some good may have been done.

Relationships established between actual instances of recordkeeping sub-types establish the hierarchy (or whatever other pattern of relationship may be observed to occur) – not the relationship between entity types whose proper use is in the design and maintenance of the documentation system. When documents are assembled into a docket, some people would say that the document is a component of the docket. This appears to be simple common sense. The docket is a physical object that can be disaggregated (decomposed) into documents and a cover. When the component objects are laid out on a table, there is nothing left – there is no part of the docket that was that can now be seen apart from the disaggregated objects on the table. On this view of the matter, there was no feature (or attribute) of the docket that was not to be found also in the component objects. It might also be said that the ceiling of the Sistine Chapel is a composition of plaster and paint.

It follows that the formation of a recordkeeping metadata schema must have in mind the formation of views of the record in combination with other records not just the depiction of an isolated object at a granular level. Depressingly, such endeavours seem to adopt schema

developed for other information resources : duplicating for records (redundantly) characteristics belonging in common to all information resources instead of concentrating on those attributes that are uniquely needed to support record-ness. A record is an information resource and must share common characteristics with other information resources, but our business is identify those that are needed for our work¹⁴. Records management standards that simply repeat data management requirements are also redundant because, while records should be managed according to data management standards, recordkeeping standards need to concentrate on something else (viz. evidence). There are requirements that are specific to the management of records (evidence) that are not found in data management standards. That is our business.

The Continuum Model

An alternative framework, more sympathetic to and in part based on the Australian System for documentation of recordkeeping, is Frank Upward's *continuum* model (**Figure Two**). Here, the component elements of a *fonds* (or any other recordkeeping entity) can be understood more dynamically as each level of description is deconstructed along four axes corresponding to four entity-types : "identity, evidentiality, transactionality, and recordkeeping containers". The identity of the records-maker (one of ICA's "authorities") can be represented by an entity along the identity axis, structure of the records along the recordkeeping containers axis, function along the transactionality axis, and some aspects of business analysis along the evidentiality axis. This identification of descriptive entities with particular axes in the model is not necessarily something that Frank Upward himself or others advocating the *continuum* model would agree with – especially with regard to the deeply mysterious and, thus far, little analysed evidentiality axis. My discussion of the model here is not necessarily an interpretation acceptable to its author and other proponents. That is its utility. It is not so much an assertion of how to document records or how to understand the documentation process as a framework within which different approaches to documentation (and recordkeeping generally) can be represented, discussed, and analysed¹⁵.

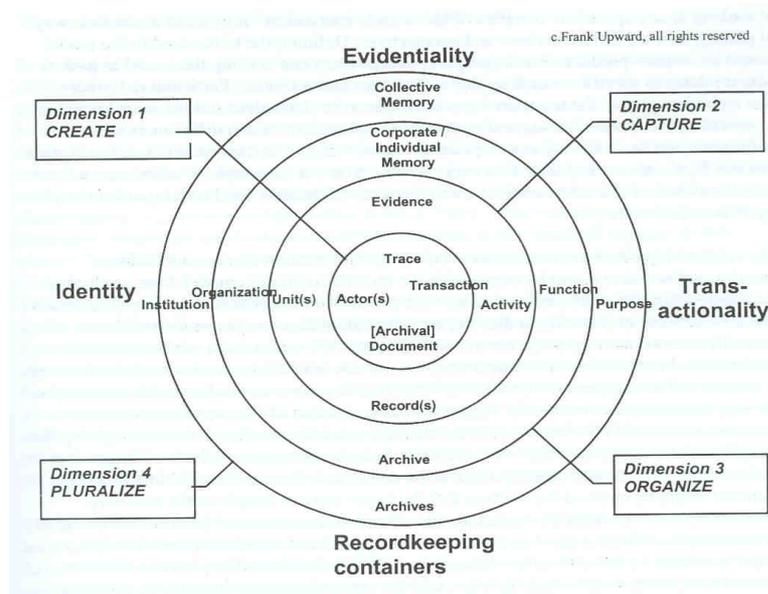
Each of these manifold ideas, compounded into one within a *fonds*, can be represented by several entity-types. When linked by relationships and a rule base, they are compounded into what would be defined as a *fonds* under the ICA Standards. Here are some of the features of the Continuum Model that make it more useful than the Multi-Level Model when applying the Australian System :

¹⁴ An information resource needs a name, for example, a record does not. A name is mandatory for a record because it is an information resource, not because it is a record.

¹⁵ For example, what is evidence in one context may not be evidential in another. Business activity comprises conceptually distinct ideas roughly corresponding to the difference between documentary objects and doc.types (or processes and function within a business classification). The more evidential (doc.types and processes) represent documentary forms and modes of conduct that describe cultural or industry-wide notions, not the specific activity of one person or corporation. When defining a doc.type (letter, for example) corporations believe they are designating its characteristics but really they are submitting to the demands of social intercourse; adopting characteristics the documentary form letter must have in order to function in dealings with other corporations. A doc.type (e.g. correspondence) or a business process (e.g. lending) thus fit along the "evidentiality" axis rather than the "transactionality" axis or the "recordkeeping containers" axis. A letter, conceived of as a documentary form rather than a documentary object, represents a cultural idea. It may deal with the lending function of a financial institution and be placed in a loans file but its evidential character (the attributes it must have to be evidence as an instance of correspondence) belong to "evidentiality". Lending (a process) can also be viewed as a social concept the definition of which derives from statutory, juridical, compliance-based, and self-regulatory sources within the financial services sector. This gives it substance and meaning along the "evidentiality" axis. This can be differentiated from the business function of lending within the domain of a particular corporation. The latter idea represents how lending is carried on within this particular corporation, related there in unique ways to other business functions and agents of action within the corporation - viewed and understood along the "transactionality" axis.

- It facilitates representation of the of the *fonds*, for example, through documentation of a variety of entities representing diverse aspects of the *fonds* instead of the clumsy device of elevating what are conceptually attributes of the *fonds* (authorities and functions) into related entities, as the ICA standards do.
- It allows greater depth in the identification of recordkeeping entities along all four axes (the identity axis allows deconstruction of “creator”: all the way down from the creator of the *fonds* to the author, owner, or user of a particular document, for example).
- It places greater emphasis on relationships between entities as the defining characteristic of the “level of description” than on the attributes of the entity being described to indicate the entity’s role and function in a recordkeeping process (scaleability) - thus, a natural person may adopt the role of an “actor” or of an “institution” or of anything in between.
- It facilitates realignment of the object of description (over time and space) to show it separating and re-connecting with other entities (enabling multi- and even parallel provenance to be more effectively documented).

Figure Two¹⁶.



What corresponds to levels in the Multi-Level Model are represented in the *Continuum Model* by “dimensions “ : create, capture, organize, and pluralize. This goes back to the ideas of Scott and the development of the Australian system :

The loss of physicality that occurs when records are captured electronically is forcing archivists to reassess basic understandings about the nature of the records of social and organisational activity, and their qualities as evidence. Even when they are captured in a medium that can be felt and touched, records as conceptual constructs do not coincide with records as physical objects. Physical ordering and placement of such records captures a view of their contextual and documentary relationships, but cannot present multiple views of what is a complex reality. The traditional custodial role takes on another dimension when it is accepted that the record is only partly manifest in what is in the boxes on the repository shelves. The purpose of archival systems is to ensure that records are preserved in the context of their creation and use, and retain their qualities as evidence so that when retrieved for future use their meaning and significance can

¹⁶ Frank Upward (2005), “The Records Continuum” ch.8 in Sue McKemmish, Michael Piggott, Barbara Reed, and Frank Upward (eds) *Recordkeeping in Society* (Wagga Wagga, Centre for Information Studies, 2005), pp. 197-222; see p. 203 for a diagrammatic representation. See also that author’s★ “Modelling the Continuum as Paradigm Shift in Recordkeeping and Archiving Processes, and Beyond – a Personal Reflection” *Records Management Journal* (Nov, 2001).

be understood. Even when documenting records in traditional forms, archival systems cannot fulfil this purpose if they do not go beyond concerns with the physical grouping and description of records in the repository, to capture data about contextual and documentary relationships¹⁷.

The *Continuum* Model supports scalability because it has the ability to accommodate stratification of the ideas represented by each of the axes in all of the dimensions. Scott needed agencies only as creators of series and organisations to provide context for agencies (which he regarded as necessarily being the creators of series). He had no need to document as entities the creators of files, items or documents. This limitation of focus is not to be found (conceptually at least) in the ICA Standards which apply “creation” (but not, apparently, provenance) as an attribute for any “unit of description” – down to, one must assume on the basis of the language used, the most granular (i.e. the discrete documentary object). The ICA Standards substantially nullify the utility of this insight, however, by treating component units of description as subordinate entities (inheriting from superior entities values rather than attributes).

A document and a collectivity to which it belongs share some attributes because they are both sub-types of a recordkeeping entity and can be appropriately managed on that basis. The shared attributes must have different values, however. Although each entity has a name (an attribute they have in common with all other recordkeeping entities) being an attribute inherited from the recordkeeping super-type, the names are different. The name of the docket is different from the names of each of the documents that make it up. The series or *fonds* to which the docket belongs has a name also, but it is not the same name. Values populating the attributes of a docket differ from values populating the corresponding attributes in related entities. If entity relationships had been coherently introduced into the international descriptive standards, there can be no doubt that the confusion of thought that now exists in their wording could have been avoided. But they have been grafted on by stealth, obfuscation, and compromise. The opportunity to articulate the implications for descriptive theory and draft appropriate standards (or suitable variations to standards based on different methodological approaches) has been lost, resulting in confusion and muddle.

“Levels” in Recordkeeping

The connection between a document and a docket (or other collectivity) to which it belongs cannot be logically inferred from the attributes or even the values which are used to describe either. It is not in the descriptive attributes, but in relationships crafted between entities, that the composition of recordkeeping collectivities is to be found. These relationships are not “links” forged between documentary objects by the recordkeeper but relationships between the activities that gave rise to the entities being described. They are hierarchical only in the sense that one entity is likely to be depicted (from time to time) as “belonging” to another. Descriptive practice and theory still has a long way to go in formulating rules to depict and itemise the ways in which one recordkeeping entity can legitimately be said to belong to another. The multi-level view involves stratification of two kinds of formative data in the top two layers of the ICA model : identification of the agent(s) of formation and identification of the structure given to the records. This stratification exists at all levels of recordkeeping, but in the subordinate levels of the ICA model (below the *fonds*) it cannot be fitted definitionally at levels below the *fonds* :

Series. Documents arranged in accordance with a filing system or maintained as a unit because they result from the same accumulation or filing process, or the same activity; have a particular form; or because of some other relationship arising out of their creation, receipt, or use....

It might be possible to twist the meaning of “some other relationship arising out of their creation” to include a records-making entity so that a series, like a *fonds*, has a dual character including both the creator and the thing created, but we know that is not so. The authors of the standards intend, if the locus of formation is not to be found in the *fonds* to

¹⁷ Sue McKemmish (1994)★, “Are Records Ever Actual?” *The Records Continuum : Ian Maclean and Australian Archives First Fifty Years* edited by Sue McKemmish and Michael Piggott (Melbourne, Ancora Press in association with Australian Archives, 1994), pp.200-201.

which a series belongs, for it to be documented as an “authority”, the formation of a description of which is subject to a different standard altogether.

Although the series was treated as a kind of indivisible atomic unit in much of Peter Scott’s work, I can testify that he experimented with both sub-series and super-series entities. Within series, he allowed for “sets” and he was not indifferent to the difficulty of representing recordkeeping systems made up of more than one series. The latter he tried to reconstruct on inventories of series by bringing together closely related series (correspondence, registers, indexes, and movement cards, for example) out of order on the inventory. Necessarily, this meant entering some series twice on the same inventory to show relationships with different series. He was thus committing at the series level the same awkward devices he criticised in others at the *fonds* level. The solution, of course, is to document the recordkeeping system as an entity in its own right and show the “component” series as sub-entities.

If descriptive standards are working, two archivists documenting the same records should come up with similar descriptions most of the time. The Internet now allows us to test this by observing how different archival institutions describe sundered parts of the same *fonds*. A sequence of Press Secretary’s Files, in the processing of which I was personally involved, covered the period in office of five successive prime ministers for whom he worked :

Series : [National Archives of Australia] M.2903 Subject Files Maintained by A Eggleton Press Secretary to the Prime Minister (1965-1971)

Created by

- 1965-1971 : *Fonds* : CA12 PM’s Department
– *Sous-Fonds* : Office of the Press Secretary
- 1965-1971 : *Fonds* : CP440 Anthony Eggleton AO CVO

This series has two coterminous creators (CP.440 and CA.12). The description at the National Archives reads (in part) “Material in the files relate to the Prime Ministers Sir Robert Menzies, Harold Holt, Sir John McEwen (minimal), Sir John Gorton, and Sir William McMahon (minimal)”. The McEwen material is minimal because he was a stop-gap acting PM for a few weeks only. The McMahon material is minimal because the pig-headed William McMahon objected to the portion relating to his period in office being lodged with the Archives. He wanted them put with his personal papers at the National Library (which was done)¹⁸. At the National Library, the fragmented portion appears to be described thus :

***Fonds* : [National Library] MS 3926 Papers, 1949-1987 [manuscript]**

Created by

- 1949-1987 : *Fonds* : McMahon, William, 1908-1988

The un-fragmented series was the creation of a Press Secretary (Eggleton) in the employ of five successive Prime Ministers. The circumstances of this creation involved the following seven (or even eight) entities :

- Prime Minister’s Department (Office of Press Secretary) – Eggleton’s employer
- Anthony Eggleton – responsible for compiling the series and for its deposit;
- Prime Ministers Menzies, Holt, McEwen, Gorton, McMahon – whom he successively served;
- the pig-headed William McMahon in his other role as creator of the McMahon *fonds* at NLA.

Each entity could be depicted as part of the provenance and none of them can claim to be exclusively responsible for either of the physical sequences they have become. Two respected archival institutions display in their respective descriptions all possible views of provenance. The National Archives displays the series as an emanation from the official process (the employing department) and as the creation of an individual (Eggleton, the person who actually compiled them, took control of them, and deposited them) while the National Library displays as creator the incumbent Prime Minister who was responsible for them receiving the fragment they acquired in his role as the creator of personal papers. Looking at the series as a whole, it would be possible to multiply the statement of formation by ascribing it (in succession) to each of the other Prime Ministers Eggleton served as well

¹⁸ This account represents my best recollection of events. I have been unable to get a useful response from the National Library confirming it, but I must assume the Eggleton material has been subsumed within the McMahon material there.

as the Prime Minister's Department and to Eggleton himself. None of these descriptions is inherently correct (although archivists may squabble about that) and to display the full story it is desirable to have them all.

Under the standardised view in ISAD(G), the *fonds* and the *sous-fonds* represent both an agent of formation (provenance) and the structure of the records (order). A un-separated description of the agent of formation of the *fonds* MS 3926 is made possible by describing the material in accordance with ISAD(G) without reference to the standard for authorities. Alternatively, a description of the McMahon records could be accompanied by and "linked" to a description of the person, William McMahon, formulated under ISAR(CPF). A description of the series M 2903, however, unless it is contained within the description of a *fonds* documented under ISAD(G) is impossible without using ISAR(CPF) to document a person or corporate body to relate as creator. Whether the separation actually occurs, is simply methodological. Conceptually, the distinction subsists in every *fonds* by virtue of the definition :

Fonds. The whole of the records ... organically created and/or accumulated and used by **a particular person, family, or corporate body** in the course of that creator's activities and functions (my emphasis).

This duality is even more apparent in the definition of *sous-fonds* :

Sub-fonds. A subdivision of a *fonds* containing a body of related records corresponding to administrative subdivisions in the originating agency or organisation or, when that is not possible, to geographical, chronological, functional, or similar groupings of the material itself. When the creating body has a complex hierarchical structure, each sub-*fonds* has as many subordinate sub-*fonds* as are necessary to reflect the levels of the hierarchical structure of the primary subordinate administrative unit.

Actually, the identity of the *fonds* lies in three things :

- its "organic" creation, accumulation, and use;
- its connection with a "particular" creator; and
- its derivation from activities and functions of that creator.

The ICA definition of *sous-fonds* contemplates organising principles also founded in geography, chronology, functions and even "similar" things (but I think it will be found in practice that geography and chronology are usually sub-sets of something else). Under these definitions, the *fonds* has three identities (or natures) in one. Perhaps this is why some of its devotees assign it a mystical status. This three-fold nature represents a body of records, a creator, and a set of functions carried out by the creator. The theological parallels are even stronger when one considers that the functions may be thought of as proceeding from the creator!¹⁹ In moving to establish a third descriptive standard, ISAF²⁰, to enable the separate documentation of functions which may then be "linked" to either records or authorities (creators), ICA completed the logical deconstruction of the *fonds* into its conceptual elements and made an alignment, of sorts, with some of the more advanced thinking on the use of metadata in recordkeeping :

The RKMS [Recordkeeping Metadata Schema] uses recordkeeping understandings to make explicit connections between business, defined broadly to encompass all social and organisational activity, the people or agents who do business, and the records which are by-products of that business. It embraces traditional articulations of recordkeeping while envisioning future articulations. Part of this vision sees records as potentially self-managing information objects, intelligent agents that transact business in complex and dynamic organisational and social environments - the rich metadata provided through the RKMS supporting the necessary functionalities. This vision links the dynamic world of

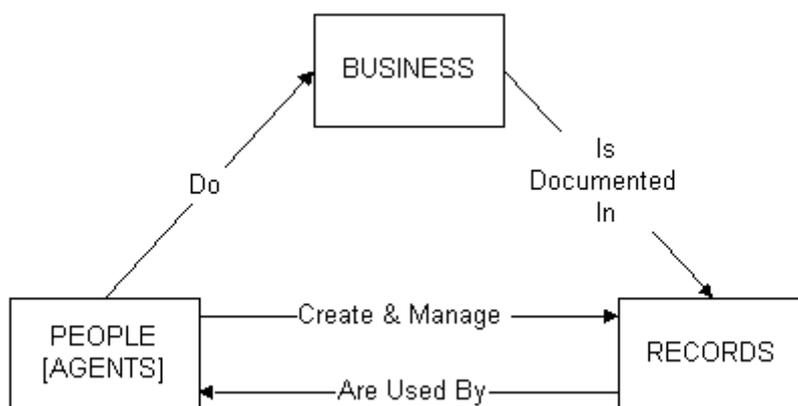
¹⁹ cf. the *filiolique* dispute.

²⁰ International Council on Archives (2007), *ISAF : International Standard on Activities/Functions of Corporate Bodies* draft (Paris 2006). Available at <http://www.ica.org/>

business and social activity to the passive world of information resource management in cyberspace²¹.

The development of a fourth standard for the description of institutions that hold archival records may, however, be regarded as a step too far. A three-entity model, see **Figure Three**, is used as the basis for the RKMS. It is different from applied multi-level description because, while the *fonds* has three natures (records, people, and function) all three are inherited by sub-entities at every “level” by a process of containment rather than relationship.

Figure Three : The Three-Entity Model²².



In the real world, formation of a documentary object begins with its authorship by an individual (an actor in a business process). Its identity derives from its characteristics as an artefact at the moment of creation : its authorship, for example, and its immediate purpose. It cannot inherit attributes carrying values from a container. Its meaning, however, will be formed by its connection with other entities and the nature of the relationships between them - forging links with characteristics that may well pre-date the moment of creation. In a quite local and specific sense, the author of a documentary object, as recognised in an electronic document and records management system (EDRMS), is its “creator”. Its documentary character and its purpose are usually held as attributes inscribed as metadata onto the object the value of which comes from schema that identify entities outside the document which precede and persist beyond the active life of the document being described. Examples would be doc.types and business classifications (BCS). An EDRMS manages the same kind of data as an archival system : documentation of record, creator, and function. It has been noted that there is still an element missing from this analysis : viz. “recordkeeping function”. The functions analysed within a typical BCS are activities carried on by the business (e.g. lending, investing, providing insurance). Another kind of function relevant to the formation of records is the process whereby business is conducted using documentary objects (e.g. corresponding, contracting, meeting). These too are functions, but they are usually embodied in an EDRMS as work-flow. Thus the identity of a documentary object may be said to derive from four aspects : doc.type, authorship, BCS, and work-flow. At the level of the *fonds*, what corresponds to work-flow? It remains hidden within the confused recesses of the *fonds* and it now has to be extracted, just as creation and function have been. To return to the example of Series M.2903 (above) it is possible to discern two functional characteristics at the sequence level : “subject filing” and “press secretaryship”. The business process from which the sequence derives its character is the provision of press services to the Australian Prime Minister. The recordkeeping process from which it derives another aspect of its character is subject filing. In order to describe the sequence completely, it is necessary to document both its business purpose and its recordkeeping purpose. But it would be quite wrong to identify these mechanical processes as the sole (or even most significant) functional dimension – which is, of course, the conduct of prime

²¹ Sue McKemmish, Glenda Acland, Nigel Ward, and Barbara Reed (1999)★, “Describing Records in Context in the Continuum : the Australian Recordkeeping Metadata Schema” *Archivaria* 48 (Fall, 1999), p.32.

²² Sue McKemmish, Glenda Acland, and Barbara Reed (1999)★, “Towards a Framework for Standardising Recordkeeping Metadata : The Australian Recordkeeping Metadata Schema” *Records Management Journal* vol.9, no.3 (December, 1999), p.177-202. See here and the reference above for a fuller exposition and extrapolation of the model.

ministerial affairs. The same can be said of the *fonds*. It may be conjectured that, as documentation processes become more closely integrated with business processes, the need for this last strand (recordkeeping processes) will wither. This remains to be seen.

Just as a *fonds* confers vicarious context (Series M.2903 is the direct creation of the Press Secretary but vicariously the creation of the Prime Minister's Office), so any recordkeeping object has many other vicarious creators. A single documentary object is authored by an individual, but that individual ordinarily belongs to a work group within a business unit that resides in a part of an organisation structure (just as the ICA's definition of *sous-fonds* describes). Similarly, a business task will be enfolded within processes, activities, and functions set out in a BCS. The most effective way of linking a documentary object with these larger entities is by inscribing or encoding the object with codes representing the particular entities from which the object emanates (author, mandate, function or process, for example) and using documentation (or description) to establish the formation of entity-based relational hierarchies in which it belongs – externally from the documentary object itself. This effectively describes the internal logic of some EDRMS applications and of Scott's system. Irrespective of whether materials are treated as documents, items, series, or *fonds*, their provenance is to be found in multiple layers and facets of creation that collectively form part of what is being termed the recordkeeping metadata used to control them. As entities are placed into relationships with other entities, they all behave in the same way, irrespective of the entity-type or the "level" at which they have been identified. Recently, I have proposed an even more unconventional view of records-making : that beyond these multiple facets of the formative process – which both the Australian system and more traditional descriptive methods seek to portray (albeit in different ways) – it is possible to document contesting views of provenance and context. This is called **parallel provenance**²³ the significance of which when contextualising entities at "lower" levels, e.g. documentary objects in shared workspace, should be obvious - but if it is not, I expand on it below in Part Two.

Part Two : Aspects of Scalability

Description deals, then, with ideas about formation based on structure, authorship, and function recurring within the recordkeeping process at many levels, enfolded into ever larger conceptualisations of belonging. Archivists approached this complexity by emphasising (privileging) one formation narrative – that of the creator of the collectivity handed over to them. Other formative processes were treated as subsidiary or irrelevant to identity – proscribed as an alternative view of provenance and relegated (if noticed at all) to descriptive commentary. This happened because description had as its object a physical body of records fixed by the passage of time into the arrangement given to it by its latest owner. Descriptions were mono-faceted and timeless because their objects were timebound, not within each of the successive and/or manifold expressions of their contextual and structural nature, but within the final phase of a life cycle and a single attribution reflected circumstances at the cessation of life. All the complexity of prior phases and other expressions of contextual meaning was documented within the "history" of the *fonds* and internalised as attributes ("description"). Respect was accorded only to provenance and internal structure as they were when the documents ceased to be active and became instead defunct relics of the foregoing formative process. Attributing multiple provenance on the basis that each successive records-making phase should be made manifest in a virtual *fonds* was subversive of true doctrine. As we have seen, however, the traditional view has always embodied other aspects of multiple provenance but it has been slow to admit that they can be more effectively documented using an entity-relationship model.

Descriptive entities have attributes inherited from a conceptual model incorporating a [universal recordkeeping type](#) (and some attributes particular to themselves). This must be because archivists are too lazy to vary the pattern or else (more likely) because the universal type reflects deep-seated but largely un-conceptualised patterns in the way archivists think about things. It is the values of those attributes, which are not inherited, that forge links in the chain of evidence - the attributes themselves being merely the tool by which we carry out

²³ Chris Hurley (2005A)★, "Parallel Provenance : (1) What, if Anything, is Archival Description?" *Archives and Manuscripts* vol.33, no.1 (May, 2005), pp.110-145 and Chris Hurley (2005B)★, "Parallel Provenance : (2) When Something is *Not* Related to Everything Else" *Archives and Manuscripts* vol.33, no.2 (November, 2005) pp.52-91.

that work in each instance. A docket sheet or file cover, the enfolded letters and any internal memoranda are in a sequence assembled by the file clerk. By convention, the creator of the documents is identified not as the compiler of the instant item but as the controller of the series to which the instances belong (or of the business processes which they document). But the instance also has a creator (of each file or docket and of each process and transaction documented therein) and many authors (for the documents themselves). Multiple provenance permits successive creators to be nominated as participants in the formative process. Simultaneous multiple provenance allows two or more to be nominated as agents of formation at the same time²⁴ (in different roles) and parallel provenance allows two or more creators to be nominated at the same time and in the same role (in different contexts). A variety of formation narratives²⁵ can thus be made at different levels and in different dimensions from the same component elements (attributes). A single documentary object - simultaneously part of an item, a series, and a *fonds* – can be portrayed by methods involving containment, but when identified as belonging simultaneously to two or more series it must be by relationship. Although objects of description are diverse, the approach is standard because it is the attributes that are inherited and the values that are inscribed. Vicarious provenance is shown through relationships : the creator of a sequence contributes to the creation of a file or docket but not necessarily as author.

Privilege was accorded the organisation given to paper records and hence to the point of view of the one who gave them that organisation. In unusual circumstances, another order might be preferred. If a file clerk haphazardly combined into a single sequence material originating in the electorate and private offices of a minister of state, an archivist might feel entitled to “restore” the original order supposed to have been given to the material at its point of origination. What is being restored in such cases is usually a disturbed filing sequence that has been displaced by another. Archivists sometimes refrain from disturbing an order that actually exists even if they think it poorly reflects the circumstances in which the records were generated if that would obliterate an intended filing sequence. Electronic documents can now be held in systems that faithfully mimic actions in a business process. It may be noted (and there could be some deep insight here struggling to get out) that it is documentary functions (corresponding, meeting, minuting, memorandising, delegating) that are relatively stable whereas true business functions (banking, manufacture, retailing, exporting) are notoriously unstable and difficult to describe. A recordkeeping system tries to capture, organise and maintain documents to reflect the business process. A business system with recordkeeping functionality, however, can use the business process to organise views of the documents irrespective of their physical placement or ideas about context and structure derived from logical hierarchies. The relational link between two documents into a docket (or its digital equivalent), as between any two recordkeeping entities, does not come from a connection embedded by a user, still less from having shared attributes. It must come from documenting the way(s) in which two entities (having specified roles and privileges in the management of business and therefore of associated documentary objects) inter-act with each other.

To support an enterprise's business functions and activities in cyberspace, and to ensure the persistence and continuing accessibility of records of those activities that are of long term value to society, innovative, reliable and robust mechanisms are required to enable the continuing reliability and accessibility of essential evidence of business activities. Electronic recordkeeping and archival systems provide such mechanisms. They are fundamentally concerned with identifying, describing and classifying the functions, activities and transactions that records document. This can be contrasted with the fundamental concern with subject classification in library and information systems. Records document actions, not subjects – they record what an organisation does – its business transactions, the

²⁴ This principle is most important when using the docket as a paradigm for electronic records. It is clear that the participation in the same time and work space by different agents of creation (either of the document or the vent./circumstance that the documentary object relates to) is a notable feature of electronic transactions. Provided their different roles (e.g. initiator and approver of action) are delineated, their joint contribution to the creation of the documentary object poses no descriptive difficulty.

²⁵ I hesitate to call them creation stories or creation legends but the metaphor is appropriate because such narratives are parallel but contested (like provenance) regardless of whether you believe the world was created by Zeus (aka Jove) or the Great Pumpkin.

business activities of which they are a part, the business functions the activities carry out, and the broader societal purposes they fulfil²⁶.

The resulting sequence derives from the relationship between documentary objects established by the inter-action between formative entities.

A simple (perhaps fanciful) example illustrates the underlying principle in the matter of the incoming message and the copy of the reply. If Mr James Boswell emails to Dr Samuel Johnson inviting the latter to dinner and Dr Johnson agrees, there is a transaction. You can break the transaction down in numerous ways including :

- social acts : invite and accept;
- inter-personal acts : send and respond;
- documentary acts : despatch, receive, despatch (reply), receive (reply)
- recordkeeping acts : file copy and attach reply.

Boswell proposes they meet at Jenkins' Tavern at 7:00pm and dine at Stone's Chop House at 8:00pm. In Johnson's house, correspondence is subjected to routine processes. Johnson's system registers (or enables him to register as needed) the crucial components of transactions in which he engages. The system has registered both Boswell and Johnson as entities involved in action, dining and invitations as functions, correspondence and possibly invitation/acceptance as documentary forms along the "evidentiality" axis, and Jenkins and Stone's as places. Johnson's system recognises an email from Boswell as correspondence – placing it in sequence with all correspondence Johnson receives - in effect, his register of incoming correspondence. Boswell's email carries a system-generated code applied to all incoming emails crossing over Johnson's domain barrier²⁷ and it may also bear a system generated code identifying it as a documentary object within Johnson's EDRMS. It could have a third code applied to it upon entry into the correspondence register purely for the convenience of the system's user but this would be optional. If Boswell has tagged the email as belonging to the documentary form "invitation" then, even before Johnson opens it, his EDRMS will register it in sequence, not only with all incoming correspondence and the last correspondence received from Boswell but also in a sub-sequence of invitations and a sub-sub-sequence of invitations from Boswell. Dr Johnson's reply is automatically captured as the next instance of correspondence between them, as well as a response to this invitation as well as into another sequence for Invitations (Accepted), and chronologically into Johnson's electronic Letter-Book. Should the correspondence be undertaken using different formats (e.g. facsimile or snail mail) emails will be also be sequenced as a sub-series of correspondence between them which will include all formats and all documentary types under the control of the EDRMS.

If Boswell has neglected to identify his message as an invitation form or Johnson's EDRMS cannot identify it as an invitation to dinner, Johnson, when he opens his friend's email, must do something to invoke the correct business process. Clever routines for analysing content ("the system has analysed this and, from the content, it may be an invitation to dinner") might prompt Johnson to make the correct choice by a click of his mouse. An icon on his terminal will enable him to open his next action in functions and save it as an invitation. The business analysis upon which Johnson's system is based will have dealt with the over-lap between dining appointments and invitations. Let us suppose that the business analyst has identified them as separate processes and established a dining sub-routine within invitations. Any further steps undertaken by Johnson will occur within a work-flow for invitations but at some stage he will have to invoke the sub-routine for dining. Now the email is a documentary object with several unique identifiers (including its encoded Id from when it crossed over into Johnson's Email System). It is known to be an instance of invitations and Johnson can create a new documentary object in sequence with this invitation belonging simultaneously within three sequences : responses to invitations, dining, and appointments. His user interface displays the standard email screen linked to his calendar but it has also been integrated into EDRMS so that he has the available icons to manage it as a record. When

²⁶ Glenda Acland, Barbara Reed, and Sue McKemmish (1999)★, "Documenting Business : the Australian Recordkeeping Metadata Schema" Paper for *ADCS'99, Australasian Document Computing Symposium, December 1999* unpublished.

²⁷ Amongst other things, this would enable Johnson's EDRMS to identify exact duplicates of every email entering or leaving Johnson's Domain in order to ensure that only one is retained.

he presses the reply icon, the EDRMS (knowing by now that it is a reply to an invitation) presents the doc.type email invitation accept/decline which, when sent will shortly be filed in his electronic diary as a case of acceptance. If the EDRMS is, for any reason, still unaware that this is an accept/decline to an invitation, Johnson will have to intervene manually at this point and make it an “appointment” and an “invitation”. As Johnson is the respondent, the system will default to the position that Boswell is the host and Johnson the invitee. The system will already know the identity of the two participants who are both registered as actor objects. Boswell is already linked as host and when Johnson accepts he will automatically be linked to the document as invitee. At this point, the system will probably allow Johnson to add other invitees using a sub-routine in the workflow before sending the message and prompt him to personalise the message to Boswell or to any additional invitees before the message is sent. As we have already seen, the response will be automatically filed as an instance of correspondence between Boswell and Johnson in addition to populating the sent box in Johnson’s email system and sub-sequences for invitations, invitations from Boswell, and invitations to dinner. We can imagine several units of description being generated as views of these transactions :

- S.100 Register of Johnson’s incoming correspondence
- S.101 Name index of Johnson’s correspondents (incoming)
- S.102 --do-- (outgoing)
- S.103 --do-- (combined)
- S.104 Email in-box
- S.105 Email sent-box
- S.106 Dr Johnson’s appointments diary
- S.107 File of correspondence with Mr Boswell
- S.108 Invitations
- S.109 --do—(in)
- S.110 --do-- (in - accepted)
- S.111 --do—(in – declined)
- S.112 --do-- (out)
- S.113 --do—(out – accepted)
- S.114 --do-- (out – declined)
- S.115 --do-- (combined)
- S.116 --do—(combined – accepted)
- S.117 --do-- (combined – declined)
- S.118 Dinner invitations
- S.119 --do-- (in)
- S.120 --do-- (in - accepted)
- S.121 --do-- (in – declined)
- S.122 --do-- (out)
- S.123 --do-- (out – accepted)
- S.124 --do—(out – declined)
- S.125 --do-- (combined)
- S.126 --do-- (combined – accepted)
- S.127 --do-- (combined – declined)

It would be as tiresome to go on as it would be to physically classify duplicates of documents according to this scheme. As a template for action, however, it is easy to see how these views of the same documentary objects can be multiplied through workflow into sub-sequences²⁸ in Dr Johnson’s records.

This can all be done by placing five entities (Johnson, Boswell, dining, invitations, correspondence) in relationships with each other and instructing the EDRMS, your email system, and your electronic calendar how to deal with documentary objects involved in a defined process or function involving those entities. Descriptive data, as archivists

²⁸ There is an architectural issue around whether to manage this diversity using entities or attributes. In some instances, it would be equally viable to obtain the view by means of attributes rather than the formation of (sub)sequences. There is no right answer. It is a choice between metadata and registration. Some may riposte that all this is far too complex to be of any practical utility. I would reply that a good deal of what I describe above is already standard functionality within email systems for sending email invitations within (and even from without) your email application domain and lodging them in your electronic calendar. What I have described is that functionality from a recordkeeping point of view.

understand it, can be used in the formation - not just the portrayal - of units of description. Johnson is the “creator” of sequence S.126. A sub-sequence S.126.01 : File of dinner invitations (combined - from Mr Boswell – accepted) would have the same provenance. Some of the documents would be authored not by Johnson but by Boswell.

Now suppose that Johnson and Boswell are in shared workspace (not to be confused with the same email domain). S.126 now contains invitations to both and acceptances by both. Correspondence with others outside the common domain will be treated exactly as Boswell’s above, but correspondence between them will be inside the common domain. There will not be two copies of Boswell’s invitation (his sent, Johnson’s received) but only one. Neither can now claim to be the sole creator of the series, only authors of documents contained within it. The series is much better understood as the expression of a process (invitations) and a function (dining) belonging to some larger contextual idea within which Johnson and Boswell are mere participants²⁹ (like Gilbert & Sullivan again).

The formation of S.126 can be fully automated. Carrying only the characteristics of a documentary object and subject only to processes and functions predetermined within Johnson’s work-flow, correspondence can be organised into correct sequences, each simply an alternative view of the sequence formed by the link forged between Boswell’s message and Johnson’s response. In a filing system, this link might be forged by placement of the two side-by-side in a folder. In an automated system, it must be forged by a relationship between two documentary objects. This can be done by a user-imposed “link” (effectively placement), or by metadata, or by an instruction to the system to “link” objects according to predefined business rules. Designing systems to create links based upon the sequence of action in which objects are involved is true recordkeeping. The succession link between these two objects is founded on the ownership link over them in successive steps by the process in which they are involved³⁰. The entity which is the basis for the internal structure of this record is the arrangement of a dinner engagement between Boswell and Johnson. Breaking that entity down into its component parts for the purposes of business analysis gives us the basis for a work-flow upon the integration of which the internal structure of the record is based and from which it is derived.

Of course, these filings do not represent a duplication of documentary objects throughout the system. There will never be more than one documentary object. Each filing is simply another view of the single documentary object held within the domain or work space.. At the other end, Boswell’s system (assuming they operate in different work spaces) will be managing his end of the correspondence in a similar fashion and giving him a variety of views of the affair. In shared work space, they would simply be taking their own views of the same documentary objects within a single system.

Incorporating Scaleability into Descriptive Standards

Using the ICA’s Descriptive Standards :

- ISAD(G)³¹
- ISAAR(CPF)³²
- ISAF (draft May, 2006)³³

it is now possible now to speak of a three-entity model for archival description (**Figure Four**). Within each standard, sub-entity types are nominated. For Records, ISAD(G), they are

²⁹ Shared workspace is a big issue inside corporate systems. Unfortunately, its application is too often treated as a security issue merely with grotesque consequences for EDRM.

³⁰ The process whereby an ownership relationship is converted into a succession relationship is outlined at greater length in Chris Hurley (2001)★, “Relationships in Records : Part 1 What Are Finding Aids For?”, *New Zealand Archivist* (Summer, 2001)

³¹ International Council on Archives (2000), *ISAD(G)*, op cit.

³² International Council on Archives (2004), *ISAAR(CPF) International Standard Archival Authority Record for Corporate Bodies, Persons, and Families* 2nd edition (Paris, 2004).

Available at <http://www.ica.org/>

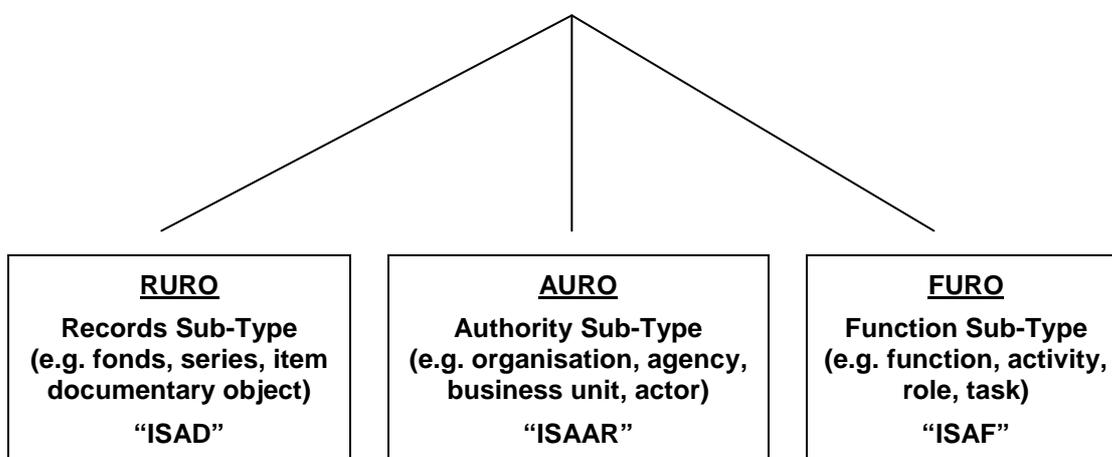
³³ International Council on Archives (2007), *ISAF : International Standard on Activities/Functions of Corporate Bodies* draft (Paris 2006). Available at <http://www.ica.org/>

fonds, series, and item. Each sub-entity has its own sub-sub-entity types (e.g. *sous-fonds*, series, and items for Records).

Whether these are true sub-types or merely instances of the same entity-type is a question too little explored. A distinction by type (or sub-type) is meaningless unless the entities differ materially. The draft ICA Standard on Functions, for example, differentiates between “function” and “activity” but nothing is said about one that does not apply to the other - the distinction is meaningless in that context. On the basis that one instance of an entity type can stand in a subordinate relationship to another instance of the same type, the ISAF standard is a template for a single functional entity irrespective of sub-type. True differences of entity type should be dealt with by relationships. If “functions” and “activities” are indistinguishable they are, at best, variant instances of the same entity type. A distinction between function and activity is not meaningless in all circumstances, but only if there are differences of attributes or functionality. The significance of this point is that there are obviously other kinds of functional sub-entities beyond the ISAF defined scope of “function” and “activity” – e.g. role, process, task, act, and so on.

FIGURE FOUR

URO : Universal Recordkeeping Super-Type³⁴



Relationships between two instances of the same type (or sub-type), between two variant instances of the same type (or sub-type), between two sub-types, or between two types all follow the same relational model. The differences between them are defined by the nature of the relationship that is crafted. Something becomes an activity when it is placed into a relationship with other entities that gives it that role to do (descriptively at any rate, and probably within the realm of business analysis also). The same thing, if placed in a different set of relationships, could well be something else. In a world of relationships, a *fonds* is not inherently a *fonds*; it is simply an aggregation of stuff until it is placed into relationships that make it a *fonds* rather than a series or an item or just junk. A file or docket is a sequence of documentary objects organised for a recordkeeping purpose. It could just as well be a series or (on Robinson Crusoe’s island) a one-item *fonds*. A sequence of documentary objects is never a *fonds* or series per se but only if we describe it as such (identifying that and not something else as the “level of description”). It isn’t a *fonds* until we say it is. If you nominate the records of the French *Ministère de la Justice* as a *fonds*, and I nominate it as a *sous-fonds* of the Government of France, and someone else nominates as *fonds* divisions within the *Ministère de la Justice*, who is correct? We all are, in terms of our nominated descriptive view-point. There may be professional norms that indicate one view-point is preferred, but that governs how we apply the descriptive rules, not the content of the rules themselves.

The hierarchical model that is uniformly used to demonstrate relationships between types and sub-types must not be understood as a phylum because it is in fact a phylogeny. The

³⁴ Chris Hurley (2004)★, “Relationships in Records : Part 6 (Everything is an Episode in the Life of Something Else)”, *New Zealand Archivist* (Autumn, 2004), especially para. 6.12ff. The URO was previously known as the HERO (Hurley’s Enduring Recordkeeping Object). This has been changed in the service of modesty.

objects of description do not exist in static hierarchical relationships with other entities but in dynamic changing relationships that present different patterns according to the date as well as the nature of the relationship.

If archival description is defined as the post-transfer process of establishing intellectual control over archival holdings by preparing descriptions of the records, then those descriptions essentially function as cataloguing records, surrogates whose primary purpose is to help researchers to find relevant records. In the continuum, archival description is instead envisaged as part of a complex series of recordkeeping processes, involving the attribution of authoritative metadata from the time of records creation. Such a view of archival description is radically different from that which informs most international initiatives to standardise archival descriptive metadata, just as the Australian series system represents a very different approach to the intellectual control of records than archival descriptive systems in other countries³⁵.

The effect of change through time is not a concept that archivists (of all people) should have trouble coming to terms with. A simple model for archival description would utilise the three sub-entity types and two relationship types (belonging and succession) applied to all three entity sub-types and variants thereof. The three sub-types would have many of their attributes (shared with the URO) in common. The resulting simplification in database design, maintenance, and use is significant. Such simplification depends upon giving some attention to the difference between attributes that operate dynamically within descriptive systems and those which serve as mere descriptive detail.

The entities at play within the ICA descriptive standards discourse are :

Universal Recordkeeping Object (URO)

: Record Sub-Type (RURO)	: i.e. ISAD(G) Entity
: Record Sub-Sub-Types	: e.g. <i>Fonds</i> , System, Series, Item, Document
: Authority Sub-Type (AURO)	: i.e. ISAAR Entity
: Authority Sub-Sub-Types	: e.g. enterprise, corporation, person, family
: Function Sub-Type (FURO)	: i.e. ISAF entity
: Function Sub-Sub-Types	: e.g. Function, Activity, Process, Task

Descriptive standards need to recognise that some attributes are common to all entities regardless of how they are used or portrayed. The sub-types (records, authorities, functions) share (or inherit) many common attributes and much functionality with all other recordkeeping objects. Once that is understood, the variations can be seen as belonging uniquely to one or other of the sub-types – needed only to apply attributes to the sub-type that are additional to the common attributes it shares with all other sub-types. Even though ICA has not followed this path (there is no URO), conceptually what now needs to be done is a stratification of the characteristics that the sub-types have in common with the URO and with each other. These are the characteristics which are (and should be treated as) attributes inherited from the URO. The rules for those characteristics inherited from the URO should be identical for all three sub-types though values will differ.

Given the methodology used up to now, such common characteristics will (alas) be fewer than they should be. Moreover, it would be necessary to establish a convention that from now on development of all three standards must proceed within this conceptual framework – i.e. that from now on no revisions are to be made to ISAD(G), ISAF, or ISAAR that are not in conformity with development of the URO. In other words, instead of three pieces of work going forward, there should be four, including a separate responsibility for maintaining the URO – being comprised of those elements of the universal recordkeeping type shared by the other three and those working on the three sub-types should not have discretion to unilaterally vary characteristics inherited by them from the URO. Regrettably, there is now a proposal for a fourth entity, but it is not the URO³⁶.

Figure Five displays examples of attributes that might be applied when describing three recordkeeping (URO) sub-types as documentary objects : a *fonds* using ISAD(G), an

³⁵ Sue McKemmish and Dagmar Parer (1998)★, “Towards Frameworks for Standardising Recordkeeping Metadata” *Archives and Manuscripts* vol.26, no.1 (May, 1998), p.39.

³⁶ The fourth entity proposed in 2007/2008 is the Institution Holding Archives – which is, of course, simply a variant sub-type of an AURO.

authority using ISAAR(CPF), and a function using ISAF. By re-aligning the standards in this way, ironing out some of the conceptual difficulties carried forward into later standards by some of the confusions still to be found in ISAD(G), and paying a lot more attention to the relationship rules, the basis exists in standards of description we already have to develop a truly scalable approach that has significant implications not only for archival description but for the broader realm of recordkeeping.

FIGURE FIVE : Selection of Characteristics shared by RURO Sub-Types

Attribute	ISAD(G)	ISAAR(CPF)	ISAF	Documentary Object
Identifier	3.1.1	5.4.1	5.4.1	Primary Key
Entity Type	3.1.4	5.1.1	5.1.1	Doc.Type
Authorised Name	3.1.2	5.1.2	5.1.2	Doc.Name
Date(s)	3.1.3	5.2.1	5.2.1	Date(s)
Relationship : Name/Id	3.2.1	5.3.1	5.3.1	Foreign Key
Relationship : Type	-----	5.3.2/3	5.3.2	How Related
Relationship : Date(s)	-----	5.3.4	5.3.4	When Related

Entities and Relationships

The super-entity or super-entity-type is used to define the attributes common to the description of sub-entities : records (ISAD), authorities (ISAAR), and functions (ISAF). The super-entity might never be used to document anything but it confers attributes on the sub-types. The sub-entities can, in turn, be used to confer attributes on sub-sub-entities. Nothing prevents use of the super-entity to hold descriptive data if the standard allows; otherwise, the super-entity does not actually hold data, it simply helps define the function and character of the sub-entities and confer common characteristics on each of the children and the actual population of data values would occur at the sub-entity level only.

Existence date, for example, is an attribute that belongs to all three sub-entities. It is , therefore, an attribute of the super-entity-type. As a consequence, each sub-type has the attribute of existence date, inherited as an attribute from the super-type while attribute value is added to the sub-type, not the super-type. In any particular instance, the existence date will be a value assigned to the sub-entity. So a *fonds* or series date range of 1998-2006 is the value that populates the attribute field "existence dates" being a field (attribute) that is defined in the super-type and incorporated into every sub-type. It doesn't, obviously, populate any attribute field in the super-type.

The super-type could, conceivably, be used for an entire *fonds* or archive made up of all the instances of entities documented in the sub-entity children. This is not the approach adopted by ICA which treats the *fonds* as an instance of the records sub-type (ISAD). I do not quarrel with this approach, merely pointing out that the other method could also have been employed. Whether or not a *fonds* could actually be described at the super-entity level using only the attributes common to all the sub-entities, on the understanding that it was to be read in conjunction with all those supporting descriptions, is an issue which could be further explored for those who tire easily of documenting other sequences.

The exercise in scalability which this illustrates is one that ICA has already adopted in its work. ISAD already contemplates a recursive approach to description by allowing the same standardised rules to apply to the *fonds* and to its component parts (*sous-fonds*, series, even items) under the multi-level rule. Using the logic of this approach, the same recursive pattern continues below each sub-type. The *fonds* or a series may function as a super-entity parent for a sub-sub-entity child (e.g. a file or item). Alternatively, a file may be treated as simply a subordinate instance of the same entity-sub-type. It is the standard that will determine the question. Like the series, the file will inherit an existence date range from the super-type, either directly from its parent (the series entity) and vicariously from its grandparent (the URO). Another approach, if files and series are both treated as instances of the same sub-type, would be for both to inherit attributes directly from the URO. Yet another approach, if files and series were to be identified as two distinct sub-types of the URO, would be for the inheritance in each case to be direct – making them both children of the URO and siblings of each other. In all cases, the data values which populate existence dates are particular to the thing being described. It is the attributes which are inherited, not the values.

There is no logical relation between the values of identical attributes at different levels. It may legitimately be asked, therefore, if the existence-date-range of a series, for example, really is the "same" as existence-date-range of an agency or function? They are obviously different in some senses. You date the coming into existence of an agency differently to the coming into existence of a series. But then, you date the coming into existence of some agencies differently from the way you date the coming into existence of other agencies. If all these different ways of dating the existence of sub-types can be expressed as variants of a single existence-dating-rule, and the concept of existence-date is comprehensible at the level of the super-type then it is a proper candidate for an attribute of the super-type. Alternatively, if it is found that data about existence-date is so diverse in reality that it cannot conceptually be dealt with as a common attribute definition of the super-type, you simply suppress that attribute to the sub-type level. If it is sufficiently similar in reality that it can be comprehended conceptually as one attribute of the super-type, then sub-type differences can be expressed as variants of the documentation standard at the super-type level. It is the discussion of whether or not these attributes are conceptually different or the same that is the intellectual challenge. The methodology adapts to whatever conclusion is reached.

FIGURE SIX : ENTITIES & RELATIONSHIPS

Choosing which roles to document and when to ignore the distinction is the essence of archival judgement. Thus :

- Entity A <creates> record series 1234
- Entity A <holds> record series 1234

And if record series 1234 is transferred somewhere else –

- Entity A <created> series 1234
- Entity A <held> series 1234
- Entity B <now holds> series 1234

Since every relationship (in recordkeeping) must say <when> related in addition to <how> related, the full description might be –

- Entity A <creates><1967-1984> series 1234
- Entity A <holds><1967-1984> series 1234
- Entity B <succeeds><1984> Entity A
- Entity B <creates><1984-1987> series 1234
- Entity B <holds><1984-1998> series 1234
- Entity C <holds><1998-date> series 1234
where C is the archival institution that assumes custody

If you want to document the role of transferring agent –

- Entity B <transfers><1998> series 1234 [to Entity C]

If you want to distinguish between the role of an entity that <holds> records in its capacity as the exerciser of the functions to which the records relate and an institution that <holds> records in its capacity as an archival custodian you can make that distinction (the more the merrier)-

- Entity B <holds><1984-1998> series 1234
- Entity C <archives><1998-date> series 1234

A similar network of relationships subsists between –

- agents and functions
- functions and records
- agents and agents
- records and records
- functions and functions.

ICA's descriptive standards work should be refocused onto more effective entity-type and relationship definition. The development of ISAF was an ideal moment to start redirecting the process using a robust and agreed model. The other two could then have caught up when next they were reviewed. The fourth entity now being proposed (Institutions Holdings Archives) is just a variant of the ISAAR entity. This is not to say that there is no distinction between creators and holders or maintainers of records. The point being made is about how

standards for documenting (or describing) them fit together. At present, they do not fit together very well.

The distinction between an institution in its role as creator and its role as custodian or in any one of the many other roles it may undertake within a recordkeeping framework need not be made by multiplying the number of entity types to correspond to the number of recordkeeping roles an institution may conceivably carry out. It is preferable to document the entity once and then relate it to other entities differently in respect of each separate role it undertakes. This approach is more in tune with data modelling and system design methodologies and renders the standards more useful in the design of systems to support the data produced in accordance with them.

ICA's proposal for a fourth descriptive standard for Institutions Holding Archival Records³⁷ (ISIAH now ISDIAH) in addition to ISAD(G) for records, ISAAR for "authorities", and ISAF for functions is a dead end. The ISDIAH and ISAAR entities share numerous attributes. Those few attributes that are unique to ISDIAH (e.g. disabled access, transport, etc.) make ISDIAH at most a variant of the ISAAR, but these are attributes that could also apply to an ISAAR entity as well. ISAAR is a standard for documenting "entities (corporate bodies, persons, and families) associated with the creation and maintenance of archives" (1.1). Institutions with Archival Holdings are clearly "maintaining" the records/archives they hold. And archives may be held by persons and families (as documented under ISAAR) not only by "institutions".

The difference between an entity that "creates" records and one that "maintains" them is to be found in the different ways they relate to the records, not in the way they themselves are described and handled – see **Figure Six**. An entity which is an Institution with Archival Holdings is also going to be An Entity which Creates and Maintains Records (in respect of its own recordkeeping relating to the reception, storage, and preservation of its holdings). We should not create a situation where the same entity will (quite unnecessarily) have two descriptions that are almost (but not quite) identical. It would unnecessarily complicate the design of systems to manage these descriptions.

Descriptive Techniques in the Creation of Records

Recordkeeping objects are themselves records. Their role and function in recordkeeping systems are yet to be fully explored. At their most basic, they are archival finding aids and there was a time when descriptions could still be seen, even when informed by a sophisticated understanding that description is integral to records-making, as something apart from the records themselves :

Persistent systems are needed to establish and maintain relationships between records and other records belonging to the same business and recordkeeping processes. Relationships must also be established between the records and entities representing components of these processes which are not themselves records and between these entities, each with the other³⁸.

They could be seen as repositories of information about entities involved in recordkeeping processes and (increasingly) about entities involved in business processes of which records were made and kept. In this latter role they may be regarded as a means of "registering" or referencing the values of metadata used in the making and keeping of records. But they were still descriptions *about* records.

Stand-alone recordkeeping systems are a thing of the past (or soon will be). Business systems are now seamlessly incorporating recordkeeping functionality. By integrating workflow capacity and the human resources management system into the user interface, business systems are, in effect, utilising the three-entity model : tasks (records), processes

³⁷ International Council on Archives – Committee of Best Practices and Standards (ICA/CBPS), *ISIAH : International Standard for Institutions with Archival Holdings – Draft* (Madrid, 2007) available at <http://www.ica.org/>

³⁸ Chris Hurley (2000), "The Making and Keeping of Records : (2) the tyranny of listing" *Archives and Manuscripts* vol.28, no.1 (May 2000), pp.14-15.

(functions), and “users” (people)³⁹. Action log-on brings into shared workspace the identity of each agent (along with knowledge of his/her role and permissions) together with workflow generated drop-down lists of all processes and customised task lists belonging to the person, the work-group and the process. All of this can be focussed around a single view of the customer and can deal with data in diverse formats. It could auto-populate the metadata in records but it also has the potential to “create” records.

Although it is probably not within the realms of technical capability just yet, it is clearly foreseeable that at some stage a recordkeeping object will participate in the recordkeeping process, not just stand idly by. The auto-population of records with metadata referenced to a recordkeeping object standing alongside (rather than outside) the action while it is being undertaken is conceptually feasible and its real-world implementation cannot be far off. Beyond this, it is now possible to imagine the transformation of UROs (and their sub-types) into a kind of avatar in which they become not just the record of the life experience of entities involved in the action but an incarnation (within the system) of the entities which are actually involved. It is most easy to imagine this with AUROs documenting the actors in a recordkeeping or business process.

Systems now recognise the actor in a process established under security models that assign privileges to “users” logged into systems. The point of reference for the “user” is that person’s identity within the domain in which he or she is privileged (established by a password or similar log-on device). But nothing prevents the assumption of multiple identities⁴⁰. AUROs would help reference, verify, and validate the identity of actors in a process by referencing cyber-identity to an enduring record within the system of a person’s essential features of identity maintained as an historical record of that person (an enhanced career file) for as long as records dealing with transactions in which that person was involved are required. There is no reason why the AURO, itself a record, could not take over the recordkeeping task of maintaining the personnel file on that person (containing or controlling records of the person’s employment details, salary and leave entitlements, positions, delegations, authorities, mandates, activating actions, delegating powers, and so on). Initiation of action would no longer be by a “user” having the characteristics documented in the AURO, but by activating an object within the system enabled to perform specified actions - viz. the AURO itself (carrying with it all the identifying features of the real person of whom the system would know nothing).

Instead of simply standing alongside the action and validating the identity of an actor in the process, the AURO would now be actively engaged in the work – part of the record, in fact, in ways that a mere author or “creator” could never be. The doer of the deed, so far as the system was concerned, would not be a real-world person having its identity keyed in by a password, its privileges assigned by a security model, and its involvement in recordkeeping circumscribed by family, hobbies, and other outside interests. The actor would be the AURO and the AURO would always remain within the system without any external distractions. The creator of the record would be part of fabric of the record because while the real person must log off and go away to carry on living in the “other” world, the AURO abides forever in the records-making space, tirelessly carrying on with its records-keeping role. I am reliably informed that the technology that would enable this to happen is ten to fifteen years away. Should that be so, it is pleasant to think that when that day comes, and it is possible for a sub-type of a universal recordkeeping object to function as both the creator and the keeper of records - to become part of the record and not just stand beside it as a documentary surrogate for the person, family, or corporation involved - the time-honoured techniques of archival description may have a contribution to make in realising that possibility.

³⁹ See, for example, MSDN Solution Architecture Center, Building Distributed Applications, “Commonwealth Bank of Australia CommSee Solution : Case Study” at <http://msdn2.microsoft.com/en-us/architecture/bb190159.aspx>

⁴⁰ For the last ten years, I have seldom had fewer than three and sometimes as many as eight cyber-identities – most of them unaware of my other selves.

Postscript : Docketing Systems (see Footnote 7)

A docket is a summary or digest of some matter or a memorandum of a decision. The terms “docketing” and “filing” are still used today in processing of legal matters (especially in the field of intellectual property). As applied to records management, dockets were (in their purest form) coloured pages enfolding other documents and bearing on the outside numerical identifiers together with a title or descriptor of the transaction and (on the inside) a summary schedule of the transaction(s) with which the documents dealt and/or a list of the documents enfolded.. The term “docket” came to apply to the whole of the papers contained therein, not just the cover. Indeed, it is possible to find transactional documents fastened together into “dockets” without the cover sheet – just as a frozen popsicle is sometimes called a drink on a stick (a drink without a glass to hold it). A typical docket might comprise papers folded lengthways down the centre and placed into pigeon holes tied up with ribbon (red tape). Curiously, in New Zealand, the tape was coloured green. The registration number of the transaction was written on the reverse side of the docket (cover) and this showed outwards when the docket was pigeon-holed. The record of a transaction comprised documents enfolded within the docket linked virtually (but not physically) to the letter-book copy of outgoing correspondence and other records (e.g. account book, registers). Each docket was registered by giving it an identifier from a numerical sequence in chronological order. The registration number was used for citation, reference, and retrieval. If matters became complex, related dockets would be linked virtually in the registers and related indexes. Alternatively, an earlier docket might be brought together physically with the later docket by enfolding it within the new docket. This was called top-numbering. Eventually docketing gave way to filing in which related dockets were simply placed together inside a cardboard folder with no attempt being made to register or index each document or transaction. Instead, the file was registered and indexed and the documents (transactions), individually uncontrolled and unregistered, were simply fastened into it. By this stage, carbon copies of outgoing correspondence were no longer kept separately in letter-books but fastened inside the file along with related papers. The control of business documents by either method began as soon as papers were received - they were registered on arrival - and they were organised into recordkeeping sequences from the outset rather than subsequently in what is known as post-action filing. The business unit responsible for managing documents used to be known as a registry.