

Structuring the Records Continuum

Part Two: Structuration Theory and Recordkeeping¹

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In the previous issue of Archives and Manuscripts I presented the first part of this two part exploration. It dealt with some possible meanings for 'post' in the term postcustodial.² For archivists, considerations of custody are becoming more complex because of changing social, technical and legal considerations. These changes include those occurring in relation to access and the need to document electronic business communications reliably. Our actions, as archivists, in turn become more complex as we attempt to establish continuity of custody in electronic recordkeeping environments. In this part, I continue the case for emphasising the processes of archiving in both our theory and practice. The archives as a functional structure has dominated twentieth century archival discourse and institutional ordering, but we are going through a period of transformation. The structuration theory of Anthony Giddens is used to show that there are very different ways of theorising about our professional activities than have so far been attempted within the archival profession. Giddens' theory, at the very least, provides a useful device for gaining insights into the nature of theory and its relationship with practice. The most effective use of theory is as a way of seeing issues. When seen through the prism of structuration theory, the forming processes of the virtual archives are made apparent.

This is a refereed article.

Introduction

In the previous part of this article on structuring the records continuum, I briefly explained a model for the records continuum drawing upon traditional archival science. The model is reproduced as *Figure 2* in this article. Its axes deal with an archivist's concerns with evidence, transactions, identity, and recordkeeping 'containers'. Four dimensions of the continuum are identified: document creation; records capture; the organisation of corporate and personal memory; and the pluralisation of collective memory³.

This part of my exploration of the continuum will continue the case for understanding 'postcustodial' as a bookmark term for a major transition in archival practice. That transition involves leaving a long tradition in which continuity was a matter of sequential control. Electronic recordkeeping processes need to incorporate continuity into the essence of recordkeeping systems and into the life-span of documents within those systems. In addressing this issue I will present a structurationist reading of the model set out in Part 1, using the sophisticated theory contained in the work of Anthony Giddens. Structuration theory deals with process, and illustrates why we must constantly re-assess and adjust the patterns for ordering our activities. It gives some leads on how to go about re-institutionalising these new patterns. When used in conjunction with continuum thinking, Giddens' meta-theory and its many pieces can help us to understand the complexities of the virtual archives, and to work our way towards the establishment of suitable routines for the control of document management, records capture, corporate memory, and collective memory⁴.

Structuration theory provides us with a way of seeing what is happening in the formulation of a postcustodial approach to the process of archiving. Within such theory, structure and process are brought together in the one word. An example of the structuration process is the development of e-mail. E-mail did not exist as a structural form but arose as people began to use the computer as a means of communication. Gradually common properties - forms as most people understand the term - began to emerge for such communications, according to the way the facility was being used. As its use has expanded so has its structuring, and the process is still occurring⁵. Forms of communication develop out of action and in turn influence our recordkeeping actions. On a much larger scale than that represented in the e-mail example, the same thing is happening generally to archival processes.

Giddens' theory brings action and structure together in ways which are most

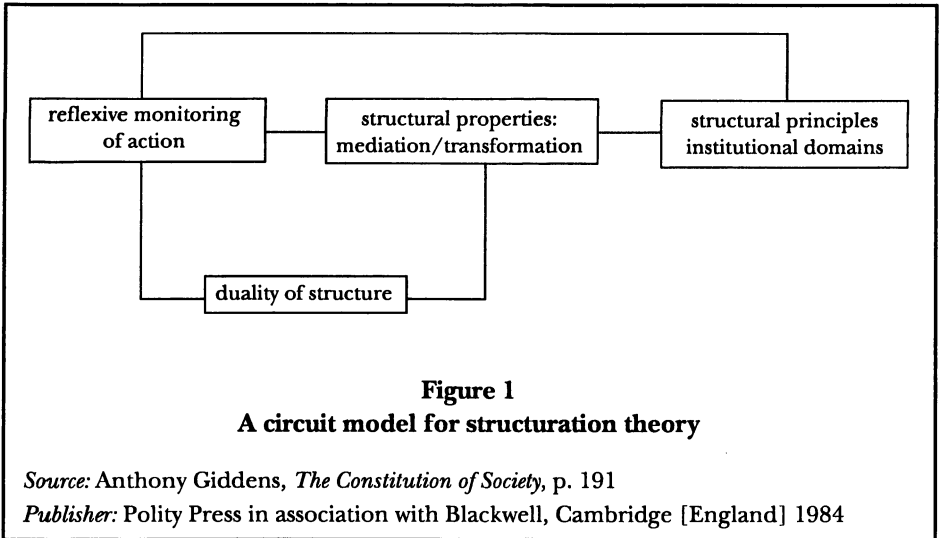
pertinent in the context of the interconnectivity and complexity of high modernity. By high or late modernity, Giddens is referring to those societies that are in the most fully developed stages of modernity⁶. His theory is very different from the sort of theory generally found in archival discourse. Structuration theory does not concern itself with the search for universal principles or with generalisations drawn from practice. Giddens regards these as minor concerns at a theoretical level. His view is that in the social sciences theory is much more about the development of conceptual schemes that 'order and inform processes of inquiry into social life'. His structuration theory is a conceptual framework. In it the way of seeing, not doing, is generalised⁷.

Recordkeeping theory already has a strong affinity with structuration theory. Both are about routines for action. The words themselves are gerunds implying processes, and the recordkeeping continuum can similarly be expressed through gerunds - creating, capturing, organising, and pluralising records. The complexity we are facing is only amenable to solutions through the establishment of new recordkeeping routines, and Giddens, as a theorist, is an explainer of the routine. His theory is not the grand theory of the past. It concerns itself with processes, with routines for action and the way these are changed or confirmed recursively over time or across space⁸.

That archivists of today are not comfortable with the process of archiving and with the establishment of corresponding routines for action is an observable phenomenon⁹. This discomfort is highlighted by electronic recordkeeping issues, but its genesis owes much to archival theory over the last one hundred or so years. In Europe, archival thinking in the late nineteenth century was influenced by what Giddens terms the structural-functional trends in thought in the natural and physical sciences. Expressions of archival theory abound in organic metaphors, and emphasise the role of records in the objective and scientific exploration of the past. The object - the archives - was studied in much the same way as a Spencerian biologist studied the functioning of frogs by dissecting corpses or a Newtonian physicist searched for universal laws.

Such an approach brought many benefits to the archival profession but as Hugh Taylor was the first to note, and many of us have said since, we travelled off on to an historical shunt. Contemporary and historical recordkeeping processes were split and regulatory recordkeeping was weakened by the division that was codified within our institutional frameworks. Modern democracies supported this sidelining of archivists by adopting policies in the regulatory domain such as thirty or fifty year access rules to records, setting limits on when the record could be viewed¹⁰.

Structuration theory offers complex and subtle ways of viewing any process, including archiving. Giddens has given it voluminous expression and re-expression over many years. His version is written in a language which is largely the property of sociology, and more specifically the property of Giddens. Simplify the vocabulary and it looks anaemic; leave it alone and it requires the reader to grapple with a new argot. Because Giddens regards theory as a way of seeing he is perpetually presenting glossaries of terms and concepts. These are essential components of enabling others to see things from his perspective, not, I presume, a dictatorial attempt to control the vocabulary of sociology. In what follows I will develop a brief explanation that tries to retain Giddens' native tongue while at the same time ties the explanation back to a particular way of reading the continuum model using recordkeeping examples. In attempting the task - which I know is probably an impossible one - I have settled upon using one diagram, set out as *Figure 1*.



Duality of structure

Giddens' structuration theory has been likened by Ian Craib to Lego¹¹. Craib never-the-less claims that it does have a foundation, duality of structure, which deals with action and structure, and the debate in sociology on their relative roles. In this section we are not dealing with Giddens' Lego but with the fundamental issue of the extent to which societies exist as analysable structures which can exert constraint over our actions. Giddens' variant of structuration theory is an attempt

to go beyond the relative significance of structure and of action. The clash of views about them, according to Giddens, can be understood in terms of whether one focuses on the subject in sociology, or its object. The subject is the actor. The object is the society as the carrier of the structure in which the actor acts. Too many sociologists, Giddens contends, are obsessed with the the subject or the object and fail to see how action and structure interact¹².

Terry Eastwood, in critiquing the assumptions he claims to find in an early postcustodial piece by David Bearman, has provided us with a prime example of the debate in our literature. Eastwood, working from a structural-functional view of the archival institution, challenges Bearman on a number of grounds. Because Eastwood views the archives as an object, he misses the mark. Bearman has since moved to the logical consequence of his initial position and created an atomic approach to recordkeeping in which the emphasis is upon the independence of the subject - the record itself¹³.

This is not to argue that Bearman is subject obsessed. In fact his main focus as we know it in Australia is the process of recordkeeping, and at an empirical level, his approach is functional. Nevertheless his writings stand in marked contrast to the type of structural-functional theorising in which the starting points are what we commonly accept to be the structures in our world and the way they should function. The structural-functional approach can take us into comparative studies of why institutions are different in different countries, and a search for what is universal. It has had much to recommend it in our past, but perhaps that is where it belongs. It gives rise to debates such as the one between custodial and postcustodial archivists presented in the pages of the previous issue of *Archives and Manuscripts*. On the structural-functional side of the debate there is the deceptively solid image of the archival institution as a fortress of legal, administrative and historical records, which is firmly based in long-standing principles. These principles relate to the fortress as a defender of the record in custody. On the other side there is a visionary image where location of the record is not an issue but the record itself, no matter where it is, can still be required to be authentic and reliable. Insofar as the archives is a place, it is a place of memory - a virtual memory palace in Terry Cook's phrasing. The first image is rooted in the paper record and the second vision relates to an electronic environment, although, as Cook shows, it is not an unknown image within pre-modern recordkeeping, and it may just be the metaphor we lost, not the memory palace itself¹⁴.

Broadly the debate has started to form itself as one between those who represent the structures and functions of an archival institution in an idealised form, and

those who increasingly concentrate on the actions and processes which give rise to the record and its carriage through time and space. In one case the record needs to be stored, recalled and disseminated within our institutional frameworks; in the other case it is the processes for storing, recalling, and disseminating the record which need to be placed into a suitable framework.

When, as archivists, we talk of structures in recordkeeping we usually mean the stabilities and continuities of form which regulate content¹⁵. Giddens would, I think, see these as structural properties (to be discussed later in this article). For Giddens, structures are better conceptualised as memory traces. They are both a regulating factor and an enabling resource which actors can draw upon recursively in action. The manner and extent to which they are drawn upon in turn reconstitutes them. Comparisons with recordkeeping theory are easy to provide. Giddens' concern with the importance of memory traces is partly shared, for example, with the juridical tradition in archival theory. Luciana Duranti, drawing on this tradition, points to the role of documents in structuring society when she argues that: 'the first and fundamental need of any organised society . . . is the regulation of its network of relationships by means of objective, consistent, meaningful and useable documentation'¹⁶. The documents, the product of action, provide structure for a society's network of relationships. Giddens, however, parts company with typical archival expressions of the juridical tradition, by being interested in process, not the structure as an object. His diplomatics would not be based on the document but the interconnection between actions and the forms for action. He places emphasis upon structures as a constraining factor and also an enabling factor. He does not assume compliance with structures, and draws attention to the recurring nature by which action and structure interact to shape each other. Structure, for Giddens, is not something separate from human action. It exists as memory, including the memory contained within the way we represent, recall, and disseminate resources including recorded information¹⁷.

Giddens has briefly explained this action-structure duality as follows:

All social interaction is expressed at some point in and through the contextualities of bodily presence. In moving out from the analysis of strategic conduct to a recognition of the duality of structure, we have to begin to 'thread outwards' in time and space. That is to say, we have to try to see how the practices followed in a given range of contexts are embedded in wider reaches of time and space - in brief, we have to attempt to discover their relation to institutionalized practices. (Anthony Giddens, *The Constitution of Society*, p.291)

One of my purposes in developing the continuum model was as a way of graphically representing the moving out from an initial communication which occurs in recordkeeping. The threading outwards in time and space occurs within the processes of recordkeeping and so does the institutionalisation of our practices in creating documents, capturing records, organising memory and pluralising memory (see *Figure 2*). The first dimension sees the beginning of a spread away from the immediate contexts of creation. In the second dimension information is added about the document or its communication. This enables it to be disembedded from the immediate contexts of its creation. Even fuller time-space distancing occurs if the record is organised as part of corporate memory. This gives the document (now a document and a record) greater accessibility within the organisation. The threading outwards enters another distancing dimension when the document connects with other memory banks across even wider reaches of time or space (pluralisation).

Once we understand these threading outwards processes it is easier to see how structures established in the various dimensions can impact upon the act of document creation. Currently in electronic systems there is an absence of recordkeeping structures and disconnected dimensions. The action part of the duality has raced ahead of the structural one; the structuration process has only just begun. As David Bearman has frequently argued, we no longer keep records in any evidential sense unless we pay special attention to the task¹⁸.

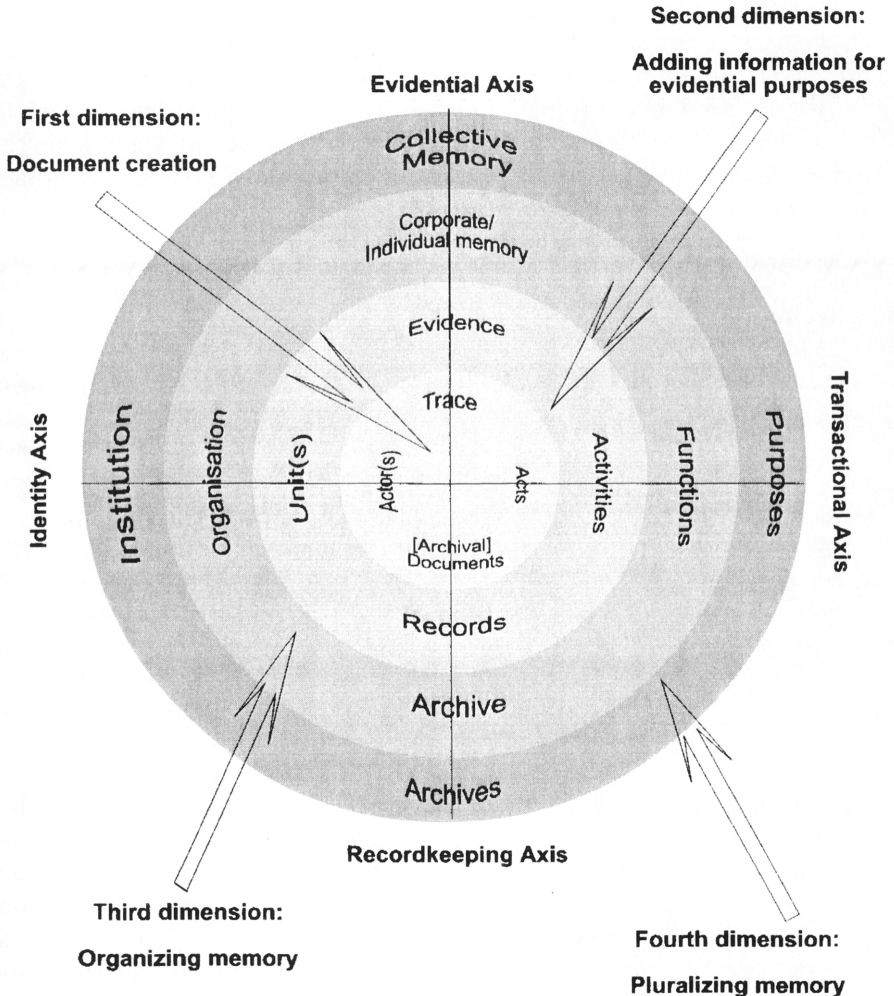
The continuum model (*Figure 2*) is not, however, a duality model. It is in fact richer, providing more points of analysis than the conventional postmodern conceptualisation of dualities. Dualities share the polarity of expression, if not the intent of the use of those terms, with the dualisms they try to counter¹⁹. A continuum model sets up a multiple view of the threading process, and is a better match to the phenomenon which Giddens is trying to describe. The dimensions and axes clarify the threading outwards to deeper reaches of time and space. The multiple views of the model go beyond a structuration reading. Many levels and styles of analysis are possible. For example, the axial arrangement brings together a complex view of provenance, a view that I presented in Part 1²⁰.

The continuum model's breadth and richness as a conceptual tool is expanded when it is seen that it can encompass action-structure issues in at least three specialisations within recordkeeping:

- *contemporary recordkeeping*- current recordkeeping actions and the structures in which they take place

Figure 2

THE DIMENSIONS, AXES AND CO-ORDINATES OF THE CONTINUUM



- *regulatory recordkeeping* - the processes of regulation and the enabling and controlling structures for action such as policies, standards, codes, legislation, and promulgation of best practices
- *historical recordkeeping* - explorations of provenance in which action and structure are examined forensically as part of the data sought about records for their storage, recall and dissemination.

Action and structure can also be seen as a major part of an archivist's concern with socio-cultural understandings of records with special reference to their role in structuring the societies in which they took shape. Continuum approaches can be more inclusive of the various traditions in archival practice than any approach based on dualisms or duality could ever be.

Reflexive monitoring of action

Giddens, in 1987, summed up a view of the importance of reflexive monitoring of action as follows:

Modern societies, together with the organisations that compose and straddle them, are like learning machines, imbibing information in order to regularize their mastery of themselves. Because of the perversity of unintended consequences, and the very contingency of social change, we may assume that such mastery will always be less than complete. Yet upon our capabilities for social learning, in the world that is the legacy of modernity, we predicate our future. Only societies reflexively capable of modifying their institutions in the face of accelerated social change will be able to confront that future with any confidence. (*Social Theory and Modern Sociology*, p. 21)

Giddens was not writing directly about a society of postcustodial archivists, but the arguments are familiar ones. The need for reflexive change is a basic premise behind postcustodial approaches. The capacity to imbibe information about recordkeeping practices in agencies will be crucial to the effectiveness of the way archival 'organisations' set up their postcustodial programs. They will have to monitor the distribution and exercise of custodial responsibilities for electronic records from before the time of their creation. Postcustodial archivists are aware of the importance of monitoring the results of any programs which involve variations in custodial arrangements, or if they are not, they will quickly become so. The fact that there are difficulties ahead are hardly any reason to delay action.

Indeed from a pessimistic point of view, we probably have to act or be irrelevant in relation to the processes of archiving in a high modern society. If we are irrelevant, no one else can properly present our perspectives on the need to institutionalise recordkeeping in the deeper reaches of time and space. This is, after all, what both our administrative-judicial and socio-cultural roles should equip us for²¹. As Adrian Cunningham argues, not to act would be a gross dereliction of our responsibilities²².

Ian Craib, whose analogy between Giddens' theory and Lego was mentioned earlier, notes that reflexive monitoring of action is a key piece which is the one most likely to get buried from sight as other pieces are added²³. It is not hard to see why this burying can occur. The concept of duality of structure points to the need for recordkeeping processes to be monitored at many levels and for many pieces to be added. As John McDonald has pointed out, recordkeeping activities need to occur at desktop level within systems that are not dependent upon the person at the desktop understanding all of the details of the operation of that system. The monitoring of action needed in such a framework is extensive²⁴. Archival organisations have a 'top-down' monitoring role as do corporate archivists and records managers. Monitoring the structures in which organisations or individuals keep records will require archival authorities to establish Locator Systems. You cannot easily monitor that which is not known to you.

Monitoring postcustodial environments will need to embrace those other groups who have an influence on recordkeeping including auditors and lawyers. All operatives in an organisation can play a monitoring role. Individuals creating records will be monitoring the structures themselves and should not be viewed as mere cyphers in the structuring of recordkeeping. If they are ignored they may subvert or ignore the system. All the actors involved in the monitoring process in turn interact with the structures of recordkeeping and produce transformations, the effects of which will have to be monitored.

In constructing the Lego there has to be an acknowledgement that complete mastery of the situation is not on the agenda. As archivists we will have to consider our purposes and behaviour, and constantly re-assess and adjust the patterns of our activities in the light of legislative and regulatory transformations. Risk management approaches, according to Giddens, are an integral part of modernity²⁵.

Giddens' more recent work on reflexivity has many parallels with metadata approaches to recordkeeping. What if the records, as David Bearman predicts,

can be self managing? Will they be able to monitor themselves? Giddens argues individuals can cope with complexity in modern environments by reflexively using the broader social environment. He also argues that individuals in high modern societies have a life-span which is markedly different from previous generations. They are freer from the externalities of place (where they live) and become involved in many more relationships and ties with others. He rejects the life cycle model in sociology, based on ritualised passages through life, and writes of 'open experience thresholds'. Once societies, for example, had rites for coming of age. Coming of age in a high modern society is now a complex process involving a host of experiences and risks which are very different to that of any previous generation. Open experience thresholds replace the life cycle thresholds, and as the term infers, are much less controlled or predictable²⁶.

There is a clear parallel with recordkeeping in a high modern environment. The custodial thresholds can no longer be understood in terms of the spatial limits between a creating agency and an archives. The externalities of the archives as place will decline in significance as a means of directly asserting the authenticity and reliability of records. The complexities of modern recordkeeping involve many more contextual relationships and an ever increasing network of relationships between records and the actions that take place in relation to them. We have no need for a life cycle concept based on the premise of generational repetition of stages through which a record can be expected to pass. We have entered an age of more recordkeeping choices and of open experience thresholds.

Consider the life-span crises that could face a document within present day technologies. It is created in a standard format, or it is not. When it crosses a boundary, it is dropped down into fixed form within a standardised representation format, or it is not. It may be imaged, or it may fall directly into an electronic store. It is swaddled in metadata during recordkeeping processes, or it is not. It is shuffled off to a number of locations including the archives, or it is not. It sits underneath an information system where it is drawn back into manipulable form, while remaining where it is (or is not). It may be bonded into a family of documents in a file, archive, or archives. It may be bonded into many families. It may be extracted from any or all of those families and re-grouped. It is systematically subject to deletion reviews, removed altogether with or without trace, or is there for as long as the system itself. It is accessible through the internet or an intranet, or it is not. Custody swirls around it as a continuing and multiple experience or it does not. In the process of being accessed or positioned in a custodial chain, its metadata should be (but may not be) revised²⁷.

In the face of the above scenario, why would anyone want to be an archivist dealing with electronic records? How can a reasonable person have any confidence that records can survive the repeated crises to which they will be subjected? There is, however, reason to be optimistic. First, there is nothing new in the above scenario. Most of these thresholds have their counterpart in paper environments, for example in Australian Government registry processes as they existed in the 1960s and 1970s, processes which were crucial to the development of the Australian continuum style of archival management²⁸. It is the increase in transactionality, and the technologies being used for those transactions, which are different. The solution, easier to write about than implement, is for records to parallel Giddens' high modern individual and make reflexive use of the broader social environment in which they exist. They can reflexively monitor their own action and, with encoding help from archivists and records managers, resolve their own crises as they arise.

David Bearman's argument that records can be self-managing goes well beyond the easy stage. It is supported by the Pittsburgh project's preliminary set of metadata specifications²⁹. The seeds of self-management can be found in object oriented programming, java, applets, and the growing understanding of the importance and nature of metadata. Continuum models further assist us to conceive of how records, as metadata encapsulated objects, can resolve many of their own life crises as they thread their way through time and across space. To be effective monitors of action, archival institutions will need to be recognised by others as the institutions most capable of providing guidance and control in relation to the integration of the archiving processes involved in document management, records capture, the organisation of corporate memory and the networking of archival systems.

Structural principles

Structural principles for postcustodial approaches to recordkeeping were discussed in Part 1 of this article, and in this section I will only draw attention to Giddens' view of them. He *is* interested in structural principles, notwithstanding that he gives principles a more minor place than they are accorded in many theories about theory.

Giddens as a sociologist is involved in attempting to identify the structural principles for the societies in which we live and this is an interest archivists should share. The high modern society has a history of labelling its ages in an indiscriminate fashion. Reliable judgments can only be made historically, but

clearly we are poised on the brink of a major transformation, no matter how that transformation is described. Postindustrial, postmodern, and information ages have been useful, but dubious, labels³⁰. The 'networked age' as a slogan, however, seems to bring together many of the changes that have been building over more than one hundred years³¹. Two of its structural principles stand out. First, in the networking of people and information the centralisation of knowledge and expertise remains a goal. The people themselves, or the stores of information, can be anywhere. Anywhere does not mean nowhere, nor does it exclude our searchrooms and the welcome that can be provided there to some of our clientele. The archives as a physical building, however, cannot be the pre-dominant site for the process of archiving, by which I mean, for the moment, the storage of the sort of resources currently found inside the walls of the archives. Second, the networked society is one in which transactionality is rampant. The distinctions archivists make between hierarchy and functionality, chatter and business, organisational structure and authority, become less easy to make³².

Giddens identifies three dimensions to the way societies articulate their institutions. These are signification, domination and legitimation. The dimensions are entwined, and can be discussed as part of a theoretical domain and an institutional order³³.

The institutional order is more closely related to the formal social approval and conciliation processes for both actions and structure. At an institutional level *signification* refers to the modes of discourse. Examples of these are the custodial and postcustodial modes of discourse, institutionalised for us in the previous issue of *Archives and Manuscripts*. Within the institutional order, *domination* refers to the political and economic frameworks in which we operate. *Legitimation* corresponds with legislation and regulation.

The theoretical domain is one of concepts. It comprises ways of viewing actions and structures. *Signification*, in the theoretical domain, refers to our interpretative schemes and the way we encode and communicate our activities. At a macro level this includes language itself; at a micro level it can include our schemes for classification and ordering. *Domination* refers to the facilities by which groups and individuals are organised and thereby harnessed to organisational or societal goals. At a macro level it includes organisational cultures; at a micro level it encompasses the actual allocation of resources. *Legitimation* deals with the sanction for actions drawn from the norms and standards which communities and individuals carry forward in their memory. Individuals may, but often do not, observe these norms. The Pittsburgh project addressed the three major strands of Giddens' theoretical

domain. It explored and set out functional requirements for evidence - *signification*. It sought literary warrants for archival tasks - *legitimation*. It reviewed the acceptability of the requirements for evidence within organisational cultures - *domination*.

The process of institutional articulation of postcustodial and continuum models in Australia is reasonably well advanced, as evidenced by the number of archivists who say: 'the thinking has been done, let us start acting'. Part of that action includes addressing the nature of our legitimation within institutional ordering and this process has begun in Australia with major legislative changes under consideration, for example, in the Commonwealth Government and in New South Wales³⁴. In Giddens' dimensional approach, the theoretical domain is re-defined to be about coding, organising our resources, and developing norms and standards. In this area the thinking has already begun to produce results, which leads this article in to a discussion of structural properties.

Structural properties

Structural properties are described by Giddens as those features of a social system which stretch across time. In Part 1 of this article they were equated with the elements of the continuum model. They are the way structures, which it must be remembered Giddens describes in very abstract terms, make themselves apparent. Archivists deal with structural properties when, for example, they analyse the characteristics of recorded information such as the document, the record, the archive and the archives. The archives as a fortress is an observable structural property, as is the archives as a physical accumulation of records. Within Giddens' structuration theory, when archivists write about their favourite features, be they records or the archives as a place, they are discussing structural properties.

Postcustodial practice in Australia is already beginning to put together a substantial array of structural properties. These developments are canvassed in the article by O'Shea and Roberts in the previous issue of *Archives and Manuscripts*. They include policies and strategies, standards, recordkeeping regimes, and what has come to be termed distributed custody³⁵.

Structural properties, according to Giddens, cluster into 'rule-resource' sets. These sets can be mediative (conciliating between our structures and our on-going actions) or transformative (changing our structures or on-going actions). As an example, the sets for the custodial model for much of this century have been

described in life cycle terms. The sets that have been established have involved mediation and transformation of the archival institution as a structural property. In such sets there is a clear separation between the creation, maintenance and disposal processes in agencies, and the appraisal, acquisition, description and preservation stages in an archival institution. These sets have controlled and enabled our action³⁶. One reason life cycle rule-resource sets are in decline is that the time and space relationships are changing. In providing a single example from the multitude of possible examples, there is probably none better than Terry Eastwood's statement:

preservation of public records in archival repositories has become one of the chief means by which citizens can learn how they are governed. Freedom of information legislation simply extends and codifies the nature of citizens' rights to this knowledge³⁷.

The simple extension Eastwood refers to [and I agree with him that it is simple] involves a massive time-space shift. Historical accountability sinks from a 30 or 50 year base to a zero base. There is an equally remarkable spatial shift in responsibilities from the archival institution to the creators and custodians of records outside of the archives. The shifts in technology relating to the production of this knowledge are even more marked. As Eastwood comments in the same article, we do not have adequate electronic recordkeeping systems. Without them there can be no record in time-space to serve any form of accountability.

The decline in the life cycle sets, then, has nothing to do with archival principles. They are now less useful and the decline is a result of changing structural principles within society. Our own structural principles (those relating to the process of archiving) may or may not turn out to be the same as those for the custodial archives. Structuration theory puts forward the proposition that there is no predetermined relationship between principles and properties. The relationship has to work itself out in accordance with the ongoing transformation or mediation processes occurring between actions and structure. Supporters of both custodial and virtual archives face the same problems in relation to authenticity, reliability, access, preservation and the challenge of representing, recalling and disseminating recorded information. It is the action agenda which is different. How we will work out the relationship between action and principle is still in the process of working itself out³⁸.

Similarly, new rule-resource sets are in the process of forming. There is no reason why these new sets cannot redevelop relationships with principles from the older

sets. The sets can also be expected to show different forms of development in different countries³⁹. In the Pittsburgh project, for example, the transformation of recordkeeping processes is directed towards the creation and management of evidence, and possible elements of a valid rule-resource set have emerged. Elements can include the control of recordkeeping actions, accountability, the management of risk, the development of recordkeeping regimes, the establishment of recordkeeping requirements, and the specification of metadata. This set is being incorporated in Australian continuum approaches, as the previously mentioned article by O'Shea and Roberts illustrates.

Storing memory

Structures, according to Giddens, perpetuate relationships in a society through memory traces. Anthony Giddens describes memory in the following terms:

. . . Memory (or recall) is to be understood not only in relation to the psychological qualities of individual agents but also as inhering in the recursiveness of institutional reproduction. Storage here already presumes modes of time-space control, as well as a phenomenal experience of 'lived time' and the container that stores the authoritative resource is the community itself.

The storage of authoritative and allocative resources may be understood as involving the retention and control of information or knowledge whereby social relations are perpetuated across time-space. Storage presumes media of information representation, modes of information retrieval or recall and, as with all power resources, modes of its dissemination. (Anthony Giddens, *The Constitution of Society*, p.261)

This comment provides important insights too often absent in information management. First there is the concept of information as an allocative and authoritative resource⁴⁰. Resources have both allocative and authoritative qualities. As an allocative resource, recorded information can be a material product of action and a source for further action. It is in itself a technology, and can be analysed as a produced good. As an authoritative resource, recorded information is a means of constituting a society, of governing relationships, and of both controlling members of a society and providing opportunities for them.

One way of explaining this duality is to point to Jenkinson's notion of continuous

custody and how it differs from distributed custody. In Jenkinson's *Manual*, custody is a linear process of inheritance. Custody is not solely allocated to the archives as an institution but somewhere along the chain they have inherited the responsibility. What matters most for Jenkinson is the distribution of responsibilities for records in linear fashion through time and within legitimated processes. As long as the site has a legitimated responsibility for custody all is well with the archival world, or at least the juridical-administrative component of it with which Jenkinson deals. If the chain is broken the records become unreliable and, while they still exist as a product, they have had their authoritative qualities damaged to a level which Jenkinson saw as being beyond repair.

In an electronic environment, distribution of responsibilities is as much spatial as temporal. The changes in our technologies have produced changes to the means of production of records reflecting distributed environments. If we are to store the records as an authoritative resource we have to consider the effect this is having upon their representation, recall and dissemination. Best practice in the defence of the authoritative qualities of records can no longer be viewed as a linear chain, and the challenge is to establish new ways of legitimating responsibilities for records storage and custody which recognise the shifts which have occurred.

The second insight is that the community is the container that stores the authoritative resource. The easiest way to understand this, of course, is in pre-literate societies where knowledge is carried forward in aural or visual form by individuals and the group. However in any society, from a memory point of view, the container of records is a society's organisations, groups and individuals⁴¹. In a high modern society archivists cannot afford to hold to vague and indeterminate notions of society that do not encompass the real containers of recorded information. Our organisations, for example, 'compose and straddle' society and the role records play in their memory is substantial. In a postcustodial approach it is the role of archival institutions to foster better recordkeeping practices within all the dimensions of recordkeeping. They will still, of course, have a special interest in historical records, however defined, and in protecting 'fourth dimension' societal interests with particular reference to the way records are made accessible to those outside the organisations, groups and individuals that have immediate responsibilities for them. When and if the individuals, groups and organisations lose interest in the records for which they have responsibility, then a host of pragmatic considerations arise, as they always have. The most significant of these is whether the records have been created and maintained in ways which make them suitable for retention over long periods of time. Unless this is the case there

is only limited use in guessing at the economics and security of particular strategies. First, we need to encourage better exercise of custodial responsibilities outside the archival institution.

The third useful insight provided in the above quotation is that recorded information plays an important role in perpetuating relations across time-space. Giddens' reference to time-space control takes us back to the concept of duality of structure in which he argues that to survive societies must bind together time and space. This occurs initially through face to face communications, and then by the threading out of these communications through time and space. The usefulness of this concept is one which we are beginning to work through in our teaching at Monash within an information continuum model based on the structuring of communicative acts⁴².

Conclusion

Recordkeeping theory is more than the traditions of any one country or culture and should be able to be conceptualised at universal levels, but for this to occur in future we will have to be more process oriented⁴³. In presenting the case for an emphasis upon the process of archiving I have been over ambitious, perhaps, and presented the records continuum model as a thin slice of archival substance between thick slices of Lyotard and Giddens. In doing so I have tried to acknowledge my debt to both academics in constructing the model, and have been attempting to present the model in conjunction with two sensitising devices.

The first device is Lyotard's assertion of the need for ana-based thinking. For Lyotard, 'post' thinking is best understood as counter thinking, based on the need to constantly think through, around, and beyond dominant ways of thinking. We need to consider different analyses, different shapes, different intuitions, and different memories. If those analyses, shapes, intuitions and memories become the dominant ones we have to begin to think against them. Postmodernity, in this interpretation, is a way of thinking that is always present in human thought, not a chronological condition.

The second device, structuration theory, presents an interlocking pattern of elements which combine to explain the reproduction of systems across time and space. As a meta-theory of process it is in danger of becoming a dominant one given its comprehensiveness⁴⁴. As a device it is, however, extremely useful. Giddens has concentrated on how systems are articulated, rather than on systems as objects⁴⁵.

I hope my exposition has helped show how this form of analysis is pertinent to archivists. His theory occupies a non-functional conceptual high ground, and is a useful counterpoint to functional approaches within the recordkeeping professions' empirical research agenda. Giddens argues that functional approaches, while important in empirical research, are pernicious if their effect is to dominate our conceptualisations. In doing so he warns us of the danger of confusing our practical experience with meta-theory. Our experience with records, archives and recordkeeping systems as object and subject obviously shapes our practical consciousness, and we can have many theories about this. At a conceptual level, however, recordkeepers are dealing with multiple realities shaped by structuring processes. The electronic records environment makes this apparent, but it is not a new reality.

My purpose in developing a continuum model, and then presenting the model within other devices, is best-expressed in a postmodern metaphor. The recordkeeping profession should seek to establish itself as ground cover, working across terrains rather than existing tree-like in one spot. Beneath the ground cover there are shafts of specialisation running both laterally and vertically. Perhaps we can, as archivists, rediscover something that a sociologist like Giddens has never forgotten. Societies, including their composite parts, are the ultimate containers of recorded information. As a place in society, as Terry Cook argues, the archives is a multiple reality⁴⁶. We can set in train policies and strategies that can help generate multiplicity without losing respect for particular mine shafts. Archivists have an opportunity to pursue policies which encourage the responsible exercising of a custodial role throughout society, including the professions involved in current, regulatory and historical recordkeeping. If we take up that opportunity, our many goals can be better met and our concerns will be addressed more effectively.

Acknowledgments

These two articles, and an earlier one on Ian Maclean and the origins of Australian continuum thinking, have not, so far, contained appropriate acknowledgements. David Bearman provided the necessary detonation of certain archival practices, and much more. Richard Brown and Terry Cook drew my attention to Anthony Giddens' work and their own work has helped shape my views. I have many colleagues at Monash who encourage my eccentricities. Sue McKemmish has helped shape my ideas and my final drafts and Barbara Reed has commented wisely on my outrageous earlier drafts. Livia Iacovino has made me stop and think more about the juridical tradition in recordkeeping. Chris Hurley produced many

perspectives on the continuum during the 1996 seminars which have helped me see the model more fully. Don Schauder raised a number of key questions about Giddens as a theorist. Bruce Wearne of the Sociology Department at Monash helped me lift the clarity of my sociological explanations and made me realise how obsessed Giddens is with gerunds. The structural-functionalism of Luciana Duranti and Terry Eastwood provided me with a counterpoint to many of my arguments, but I also owe them debts for their respective explorations of recordkeeping processes and the intellectual milieu of archival ideas, and for their work on the administrative-judicial tradition of recordkeeping. Glenda Acland has provided perceptive comments on my articles - and supportive ones, for which I am most grateful given how different the articles are from conventional archival theorising. Australian Archives, and its many past and present staff members, has been important to me. Others, too numerous to mention, have raised stimulating questions for which I am grateful.

Endnotes

1. I did not intend to use the phrase 'structuration theory' in the title of this article because of its awkwardness and the reaction of some colleagues to it as a term. Its increasing acceptance in academia, including in systems analysis courses at Monash University, has changed my mind.
2. In the submitted draft for Part 1, I spelled postcustodial as one word, but the editorial pen revised this to post-custodial. I think hyphens should be reserved for appropriate usage in relation to the temporary joining together of concepts, and that words like postcustodial (or recordkeeping) have passed beyond that level of usage. The draft for this article was also submitted using the 'postcustodial' spelling.
3. The term 'recordkeeping containers' is not used in the original article and represents a later explanatory addition. The containers are documents, records, the archive (corporate memory as a container) and archives. Later in this article I will discuss a more significant 'recordkeeping container' which is the community or society shaped by the recorded information it stores.
4. For a discussion of Giddens' work from an archivist's perspective, see Richard Brown, 'Macro-Appraisal Theory and the Context of the Public Records Creator', *Archivaria*, no. 40, 1995, pp.121-172. Giddens' influence on other disciplines, including accountancy, management, politics, information systems design, is briefly indicated in Geoffrey Walsham, *Interpreting Information Systems in Organisations*, John Wiley Series on Information, Chichester, 1993, pp. 60-71. A good summary of structuration theory is provided in Ian Craib, *Anthony Giddens*, Routledge, London, 1992, Chapter 3.
5. I am grateful to Chris Hurley for providing the e-mail example.
6. In this article I have used Giddens' inconsistently followed practice of using the phrase 'high modern' society in preference to late modern.

7. The points made about Giddens' view in this paragraph are all drawn from Anthony Giddens, *The Constitution of Society*, Polity Press in association with Basil Blackwell, Cambridge, 1984, Preface and Introduction.
8. I am grateful to Bruce Wearne for pointing out to me Giddens' fixation with gerunds.
9. Glenda Acland has been the most consistent observer of this discomfort with 'archiving' on the Australian archival scene, and her paper at the 1995 Society of American Archivists Conference is one of the clearest statements on this.
10. Archivists, in Glenda Acland's choice phrase, became undertakers; see Glenda Acland, 'Archivist - Keeper, Undertaker or Auditor', *Archives and Manuscripts*, vol.19, no.1, May 1991, pp.13-25.
11. Don Schauder drew my attention to Craib's analogy, and the work itself (see endnote 5). I had largely prepared the drafts of this article outside of other explanations of Giddens' theory because I wanted to view the theory myself, but Craib's account has proved a very useful one.
12. Anthony Giddens, *The Constitution of Society*, Introduction.
13. See, for example, David Bearman, 'Item Level Control and Electronic Recordkeeping', <http://www.lis.pitt.edu/~nhprc/item-lvl.html>.
14. T.Cook, introductory comments in the paper he presented to the ICA conference in Beijing, 1996, 'Archives in the Post-custodial World'.
15. Giddens explains his view of structure in *Social Theory of Modern Societies: Anthony Giddens and His Critics*, edited by David Held and John B. Thompson, Cambridge University Press, 1989, pp.254-5.
16. Luciana Duranti, 'The Odyssey of Records Managers', *ARMA Quarterly*, October 1989, p.4.
17. The connections between Giddens' structuration theory and the juridical tradition were identified by my colleague Livia Iacovino on reading a draft of this article. Many of the themes in this paragraph are picked up later in the article.
18. David Bearman, *Electronic Evidence: Strategies for Managing Records in Contemporary Organisations*, Archives and Museum Informatics, Pittsburgh, 1994, *passim*.
19. This is a point made clear to me by Don Schauder during discussions upon the information continuum model. Unfortunately we still have many dualisms to deconstruct into dualities before the reconstruction into continuum models can be better understood, including those between government and non-government records, archives and manuscripts, records and information, juridical-administrative approaches and socio-cultural ones.
20. Terry Cook has suggested to me that structuration may be provenance. I am not sure, and still see provenance as a structural principle. Within a provenance (archival science) reading of the model the horizontal axes represent approaches to action and structure being taken within archival theory and practice. The vertical axes represent an emphasis upon structure as a memory trace and an emphasis upon recordkeeping's major structural forms which operate in support of these memory traces.

The many different ways of reading the model are intriguing to me, but I have not included anything on this in the text as my interest is unlikely to be shared by others. In the custodial versus postcustodial debate the model can be neutral and many different explanations of it are possible. I have played around with a neo-Platonic representation of it as an idealised form, an Aristotelian

reading of the dimensions as core elements, a big bang theory explanation, and the structuration reading contained in this article. I have also catalogued about half a dozen other ways of reading the model presented to me by other archivists. My favourite reading remains a postmodern one in which the model throws dominant archival theory into disarray. More practically, the continuum model can be applied to an analysis of recordkeeping practices in any period of history. It can help 'map' how a particular society created documents, captured them as records, organised them, and carried them across space and through time.

21. I have incorporated Cook's notion that archival traditions can be discussed within administrative-judicial and socio-cultural themes at a number of points in this article. See his paper, 'Archives in the Post-Custodial World', cited in endnote 14.
22. Adrian Cunningham, 'Ensuring Essential Evidence', *National Library of Australia News*, November 1996. We should not make the mistake of thinking that redirecting ourselves will be easy, however. A number of Giddens' Lego pieces that surround reflexivity of action not mentioned in this article are relevant to getting a better grasp of the process of archiving. These include coping with the unintended consequences of our actions, and building up our practical consciousness on a continuing basis in relation to the environments in which we operate. These are major themes in Giddens' explorations of reflexivity, but there is not space to explore them in this article.
23. Ian Craib, *Anthony Giddens*, p. 35-6.
24. John McDonald, 'Managing Records in the Modern Office: The Experience of the National Archives of Canada', *Playing for Keeps: The Proceedings of an Electronic Records Management Conference hosted by the Australian Archives, Canberra, Australia*, Australian Archives, Canberra, 1995.
25. Giddens brings risk management to the foreground in his book, *Modernity and Self-Identity: Self and Society in the late Modern Age*, Polity Press in association with Blackwell, Cambridge, 1991. In considering an earlier draft two reviewers suggested I should make more of risk management. I have, however, made less of it because I am uncomfortable with the way risk management is sometimes used in records management literature as if it is only an organisational issue. It is relevant throughout the duality of structure, but it would take too long to make my case. Accordingly I have left the issue in abeyance as I do not want to be seen as an uncritical advocate of corporatisation, or imply that Giddens supports any view of risk management other than one which takes into account duality of structure.
26. See Anthony Giddens, *Modernity and Self-Identity*, pp. 146-8.
27. Each document will live in its own segment of time, separated from physicalities of place, free to be grouped, re-grouped, or go off on its own. It will be subject to a range of 'lifestyle' choices dictated as much by the boutique choices of the agency as the real needs of recordkeeping. That boutique array includes many attractive designs when viewed on the peg, including document management software, records system software, the intranet, and the internet. As separate tools, however, they are not going to meet anyone's recordkeeping needs. The dimensions of recordkeeping will have to function together, not clash with each other in their implementation. The outwards threading process and the inwards structuring of the continuum will have to mesh.
28. I am grateful to Sue McKemmish for pointing this out. For further examples of the parallels between the virtual world and recordkeeping in paper environments see her article, 'Are Records Ever Actual?', *The Records Continuum: Ian Maclean and Australian Archives First Fifty Years*

edited by Sue McKemish and Michael Piggott, Ancora Press, Melbourne, 1994, pp.187-203.

29. See Pittsburgh site reference: <http://www.lis.pitt.edu/~nhprc/>
30. As descriptors of the ages we live in, I would critique the term postindustrial because it is not in itself descriptive, postmodern because it refers more to ways of thinking than to institutional ordering, and information because all societies exist within their own 'information age'.
31. We tend to think of 'globalisation' as a recent phenomenon, and forget that towards the end of the nineteenth century much of the rhetoric relating to the trade expansion resulting from changes to transport and communication contained exactly the same kind of new global world order imagery.
32. As an example of the depth of re-thinking needed when we contemplate the onset of a networked society our very governance ceases to be purely a 'Government' matter. If networking continues to grow in importance (and of course it will short of calamitous actions intervening) governance becomes more clearly ascribable to the holders of power within our transactional nets. Political governance of those nets will become a complex commercial, regulative and social focus for action. This is the society we are starting to live in and in which we will have to work out our significance, our claims for resource allocation, and our legitimation. Our structural principles for recordkeeping theory will not in themselves be greatly transformed, since recordkeeping has always been concerned with inter-relationships. Our structural principles for institutional ordering, however, can be expected to change dramatically.
33. Walsham, an information system analyst, has produced a useful discussion of signification, domination, and legitimation in that field (see endnote 4).
34. The Australian Law Reform Commission report on the Review of the *Archives Act, Issues Paper 19*, Sydney, December 1996, has a chapter on the principles for archival legislation which sets out an interesting array of principles relevant to structuring the continuum within the legislative dimension of institutional ordering.
35. See Greg O'Shea and David Roberts, 'Living in a Digital World: Recognising the Electronic and Post-custodial Realities', *Archives and Manuscripts*, vol. 24, no. 2, November 1996, pp. 286-311. Postcustodialists in Australia appear to be comfortable operating ahead of institutional ordering using what Giddens has come to describe as 'generative politics' which involves taking actions which are designed to lead to the transformation of structures. The Pittsburgh approach is generative in effect, if not intent, in that it has dropped a set of requirements for evidence into the action-structure whirlpool and in doing so has set transformations in progress. In Australia a number of archival institutions can be said to be beginning to operate in generative mode including the Australian Archives and the New South Wales Records Management Office. Australian Archives, of course, was the first national archives to advocate distributed custody strategies which postcustodialists view as generative of change.
36. The Canadian archivist, Jay Atherton, demolished one of the sets effectively at a theoretical level in his article on the continuum published in *Archivaria* in the mid 1980s, and I am repeatedly uttering the last rites (thank you Mark Stevens for noticing this). See Jay Atherton, 'From Life Cycle to Continuum: Some thoughts on the Records Management -Archives relationship', *Archivaria* no. 21, Winter 85/86, pp.43-51. I think this article does more than issue last rites, but no doubt the life cycle will still walk on for a while partly because it is so strongly present in institutional ordering, even in Australia.

37. Terry Eastwood, 'Should Creating Agencies Keep Electronic Records Indefinitely?', *Archives and Manuscripts*, vol. 24, no.2, November 1996, p. 260.
38. As individuals, supporters of custodality and of postcustodality are as likely to vary amongst themselves in their understandings of, and respect for, archival principles as they are between the groups. What varies less is that those who are classed as postcustodial are more willing to contemplate actions which shift major responsibilities for evidence from the physical holding power of the fortress that is the archives to the logical holding power of recordkeeping systems, and then start considering what variation this must mean in terms of structural properties for recordkeeping. It could, of course, be argued that the new responsibilities are those of records managers not archivists. This, however, strengthens the case made by Luciana Duranti that records managers are inheritors of the archival tradition, of Ian Maclean that records managers are the true archivists, and of Sue McKemmish and myself that the recordkeeping profession encompasses groups that are currently labelled archivists and records managers. An archivist, within this construct, is concerned with archival documents in individual, corporate and any other form of social space. Historical recordkeeping has a particular interest in the longevity of the record including its outliving of the spaces it occupies. Regulatory recordkeeping is concerned with the nature of the record as evidence. Current recordkeeping has its focus upon actions which are occurring in contemporary time-space. The traditional custodial discourse only provides us with a government-based squint on one significant component of the recordkeeping profession, the historical recordkeeping segment.
39. As an example, in our teaching in archives and records courses at Monash University, we are concerned with the rule-resource sets for educating archivists and records managers. Sets that we have developed include the one within the continuum model. That set creates a web approach to document creation, records capture, the organisation of memory, and the pluralisation of memory in archives. From a system point of view, we have developed a different and complementary set. This set involves defining inputs into recordkeeping systems in terms of societal activity, taking the inclusive view of society outlined above. We stress the need to produce outputs which serve as both evidence and memory. We describe the black boxes of recordkeeping in terms of the 'documentation' of society, again within an inclusive view. Documentation is given concrete form by an emphasis upon the representation, recall and dissemination of recorded information. Beneath these processes we are concerned with the capacity of archivists or records managers to analyse socio-legal and socio-technical environments in which recordkeeping takes place. In the past we have brought the construct together by an emphasis upon the need to build knowledge and skills in relation to appraisal and description activities carried out within a total view of recordkeeping. In the future the information continuum described in endnote 42 will play an important role in reconstructing our sets.
40. Sue McKemmish and I have written about the importance of Giddens' view of information as an allocative and authoritative resource, particularly as a balancing perspective to the 'information as product' view in *Archival Documents: Providing Accountability through Recordkeeping*, Ancora Press, Melbourne, 1993, eg pp. 7 and 47-8.
41. One of the Australian archivists to understand this has been Fabian Hutchinson. See the obituary notices in *Archives and Manuscripts*, vol. 22, no.2, November 1994, pp.293-299.

42 One can head off in many fruitful directions from Giddens' emphasis upon the spread of communications, and currently Barbara Reed, Don Schauder and myself have been using it as a starting point for developing a model of the information continuum. From the outset, in constructing a model for the records continuum, there were elements that were missing. How does the model incorporate systems? Where does technology fit? What reference is there to regulation and the legal environments of recordkeeping? What is the place of metadata? My own view was that these were forces that acted upon the continuum and were to be explained as environmental factors. These absences enlivened seminars on the continuum and made it possible for variant models and interpretations to be developed. David Bearman, for example, produced a recordkeeping regime version in which the dimensions were the event, documentation, the management of risk, and societal purposes (see endnote 14). In that model some of the structural properties were changed, including one change in which the actor became the instrument, reflecting the reality which is that many 'face to face' recordkeeping relationships will be - and already are - between systems, not people. His model, the original model, and the absences from the original model stimulated Barbara Reed to work on an information continuum model which applies to all forms of recorded information.

Of considerable assistance to this project has been the study of print communications by structuration oriented sociologists Kaufer and Carley, introduced into our discussions by Don Schauder. They argue that the communication process is a cyclical one and that structure and culture co-evolve through each cycle of communicative transactions (David S. Kaufer and Kathleen M. Carley, *Communication at a Distance, The Influence of Print on Sociocultural Organisation and Change*, The University of Chicago Press, Chicago, 1994). Once we moved the focus of the information continuum model to communicative acts, a set of attributes emerged which is common to all forms of recorded information. The dimensions of the model remain the same - create, capture, organise and pluralise. The axes become populated with attributes selected for their descriptive power rather than their importance as structural properties.

The model will place into a single framework many of the common problems information specialisations face in relation to data storing, archiving, the management of information through time, and the management of documents. Those common problems include how systems can be given duration through time, what is the role of metadata, how is memory managed, and how does all this relate to social actions and structures. However, the information continuum model still allows for the life-span of different types of communication to be worked out in differentiated fashion underneath it in such a way that it can integrate approaches without damaging specialisations. The structural properties contained in the records continuum model, for example, are in no way duplicated in the information continuum model. The differentiation will become apparent within considerations of how data bases, published information and archival documents have their origins in different types of communications. These differences will require metadata and system variations and will produce different types of memories.

43. I am grateful to Terry Cook for pointing out the extent to which our work in Australia is helping to generalise archival theory. See his paper, 'Archives in the Post-Custodial World - the Interaction of Archival Theory and Practice Since the Publication of the Dutch Manual in 1898', presented at the ICA Conference in Beijing, 1996.

44. Critiques of Giddens' work have become frequent. To date I have not found time to read them in any depth. From those I have scanned, Giddens' critics generally accept that he has produced a worthwhile body of work, *but* . . . The 'buts' vary, but a common reaction from my colleague Barbara Reed and a sociologist at Monash, Bruce Wearne, is that Giddens' theory is based too much on historical accretion. This leaves us with the prospect of having to be resigned to our fate and being 'doomed to act' particularly when it is expressed in terms of a circuit model, as I have done in this article. Giddens argues that individuals can influence structure and that our actions are not inconsequential, but the elements of the theory seem to be pressing us on. Giddens discusses this style of critique in *Social Theory of Modern Societies: Anthony Giddens and His Critics*, pp.254-7, but I cannot readily follow the arguments Giddens makes.
45. The records continuum model, Giddens-like, skirts the issue of a system as an object, and yet provides a syntax for discussing the transformations involved in moving from document management systems to particular records systems, to wider corporate or individual systems and to even wider archival and other locator systems. In the records continuum model objects such as the 'archives' are expressed as structural properties.
46. Terry Cook, 'Electronic Records, Paper Minds: the Revolution in Information Management and Archives in the Post-custodial and Post-modernist Era', *Archives and Manuscripts*, vol. 22, no. 2, November 1994, pp.300-328.