

DIPLMATICs **of** **Electronic Records**

Luciana Duranti

InterPARES Project &
School of Library, Archival and Information Studies,
University of British Columbia



InterPARES Project
Dr. Luciana Duranti
Project Director

What It Is

Diplomatics developed as a science and a discipline for the purpose of verifying the authenticity of records of uncertain or contested origin.

The discipline comprises the principles and rules that should guide the verification of a record's authenticity.

The science comprises theory, methodology and practice:

- Theory describes the nature of a record and its components (medium, form, persons, action, etc.)
- Methodology establish the procedure to follow in the critical analysis of a record
- Practice, the exercise of which results in a branch of diplomatics named “special diplomatics,” applies theory and methodology to real situations



Diplomatics

Diplomatic science controls the discipline, because the principles and rules that guide the scholar must be consistent with the theory of the record and with the methodology on which criticism is based.

Diplomatics was conceived and arrived to us as a contained and self-referent system that reflects the 17th century ideas on acquisition of knowledge by means of empirical research, on the record as proof, and on proof as inference or deduction.



Diplomatics - I

Diplomatics sought to establish a record's legal and historical truth on the basis of its documentary truth. Moving from the observation of perceptible matters of fact (the elements of the document itself) to assertions about imperceptible matters of fact (the past in which the document was created), diplomatics nurtured the belief that knowledge about a reality to which there was no direct access could be attained by examining its documentary traces.

Heather MacNeil, Trusting records in a postmodern world, in Archivaria 51, 2001, p. 36-47, at p. 39.



Diplomatics - II

Traditionally, diplomatics has studied individual medieval documents that related to acts because they were the substance of them or the proof that they had occurred.

Its usefulness was initially limited to solve legal diatribes and later to support philological and historical research.

Between mid-19th century and mid 20th century it was used as an auxiliary science of history.

Archivists always used it as a method of establishing the provenance or records and understanding their nature as records, rather than as historical sources.



Diplomatics - III

- In the second half of the 20th century, some scholars have tried to apply diplomatic methodology to the study of contemporary records.
- They redefined the record in a more inclusive way and focused their attention on the business procedure that generates the record as opposed to the documentary procedure
- This change in focus broadened the sphere of diplomatics to include a consideration of the relationships among the records resulting from the same business process, thereby integrating diplomatics with archival science.



Diplomatics - IV

Between 1989 and 1992, I wrote a series of articles published in Archivaria 29--33, with the intent of extending the concepts and methods of diplomatics to contemporary records. This effort was based on two assumptions:

- 1) Diplomatics is a live science, capable of renewal without compromising its theoretical and methodological foundations.
- 2) The concepts and principles of diplomatics can be used in the design of digital systems for record-making and record-keeping.

Subsequently published in one volume: Luciana Duranti, Diplomatics: new uses for an old science, Lanham, Maryland, and London, 1998 (Scarecrow Press, with Society of American Archivists and Association of Canadian Archivists)



Diplomatics - V

Results of the first assumption::

- A broader definition of record (act, persons, form, content, medium)
- The creation of two new categories of records, that is, records that support an action and records that relate to an action but do not participate in it (supporting and narrative)
- A more precise articulation of the concept of annotation
- The removal of medium from the elements of form
- Variations in the definition of the elements of form
- The introduction of the concepts of procedural phases and category of procedure.



Diplomatics - VI

The second assumption was presented as a logical argument, but, differently from the first, was not tested, because the transformation of a discipline conceived for analyzing and evaluating historical material in a method for designing and building a digital system is not evident or even only implicit in the presentation of concepts, principles and methods and its realization cannot be left to the creativity of those who design and build information systems.



Diplomatics - VII

Between 1994 and 1997, Terry Eastwood and I developed a research project called The Preservation of the Integrity of Electronic Records, the purpose of which was to identify and define the nature of an electronic record and the conditions necessary to ensure its integrity while maintained by the creator in active or semiactive state. Heather MacNeil was our graduate research assistant. In 1995, the US Department of Defense (DOD) joined us with the intent of designing a record-making and record-keeping system based on the theory and method of diplomatics.

The findings of the project are published in Luciana Duranti, Terry Eastwood and Heather MacNeil, The Preservation of the Integrity of Electronic Records (Dordrecht: Kluwer Academic Publishing, 2002)



InterPARES Project

Dr. Luciana Duranti
Project Director

Diplomatics - VIII

- From a theoretical point of view, the UBC/DoD project produced a slight revision of concepts, but, mostly, it integrated the theory of diplomatics and archival science. In defining the components of a record it added the context and the archival bond to the medium, form, action, persons and content. To the list of the persons necessary to the existence of a record, it added the originator and the creator. It defined the concepts of reliability and authenticity.
- From a methodological point of view, it produced rules for record-making and record-keeping by the creator which are consistent with the concepts and principles of diplomatics and archival science. It also produced the DoD 5015.2 Standard.

See Design criteria standard for electronic records management software applications (DOD 5015.2-STD)



Diplomatics - IX

In 1999, we launched InterPARES, which used diplomatics both as a methodology to understand electronic records and to develop a method for preserving their authenticity in the long term, and as one of the objects of research, to see whether its concepts and methodology could stand the test of time and deal with the challenge of electronic records



InterPARES Project

Dr. Luciana Duranti
Project Director

InterPARES and Diplomatics

Concepts:

- Refinement of the definition of record
- Refinement of the definition of authenticity
- Definition of authentication
- Distinction between elements of form, attributes, and digital components
- Separation of annotations from form
- Identification of technological context as a necessary part of the record



Definition of a Digital Record

- Fixed form (i.e. its binary content is stored so that it remains complete and unaltered, and its message can be rendered with the same documentary form it had when first set aside)
- Unchangeable content
- Explicit linkages to other records within or outside the digital system through a classification code or other unique identifier
- Identifiable administrative content
- Author
- Addressee
- Writer
- Participant in or supporting an action either procedurally or as part of the decision making process



Authenticity

Refers to the fact that a record is what it purports to be and has not been tampered with or otherwise corrupted.

In other words, the trustworthiness of the record as a record.

It consists of identity and integrity



Identity of a Record

It refers to the attributes of a record that uniquely characterize it and distinguish it from other records. These attributes include: the names of the persons concurring in its formation (I.e., author, addressee, writer and originator); its date(s) of creation and transmission; an indication of the matter or action in which it participates; the expression of its archival bond; as well as an indication of any attachment(s).



Integrity of a Record

- Its wholeness and soundness. A record has integrity if it is intact and uncorrupted
- A record is intact and uncorrupted if the message that it is meant to communicate in order to achieve its purpose is unaltered
- A record's physical integrity, such as the proper number of bit strings, may be compromised, provided that the articulation of the content and its required elements of form remain the same
- Integrity may be demonstrated by evidence found on the face of the record, in metadata related to the record, or in one or more of its contexts



Authentication

- A declaration of authenticity, resulting either by the insertion or the addition of an element or a statement to a record, and the rules governing it are established by legislation.
- A means of proving that a record is what it purports to be at a given moment in time (digital signature), as opposed to a quality of the record.



Elements of Form, Attributes, Digital Components

- Elements of form are the parts of the form of a record that determine its external makeup or manifest the action the record participate into and its context
- Attributes are the characteristics of a record that uniquely identify it
- Digital components are the physical parts of an electronic record that have specific storage requirements (units of storage)



Template for Analysis

Built on two hypotheses:

- on the diplomatic hypothesis that, independently of differences in provenance, date and appearance, all records are sufficiently similar to conceive of an ideal documentary form that contains all the possible formal elements of a record
- on the research team hypothesis that, even if the way in which they manifest themselves may vary, the same formal elements are present in both traditional and electronic records



Template for Analysis

The decomposition of a record in its constitutive parts, with the definition of each component, the explanation of its purpose, and the indication of its function as it regards the authenticity of the record



Categories of Components

- Documentary Form
 - extrinsic elements
 - intrinsic elements
- Annotations
- Context
- Support



Extrinsic Elements of Documentary Form

- presentation features (general and specific)
- seals (or digital time stamp of a trusted third party)
- special signs (e.g. watermarks)



Intrinsic Elements of Documentary Form

- Protocol: elements that convey aspects of the record's juridical and administrative context
- Text: elements that communicate the action itself
- Eschatocol: elements that convey aspects of the record's documentary context and its means of validation



Intrinsic Elements—Protocol

- Author (letterhead, superscription)
- Originator (header)
- Title
- Chronological date
- Place of origin of record
- Addressee(s)
- Receiver(s)
- Subject
- Salutation



Intrinsic Elements—Text

- Preamble
- Action or matter
- Clauses



Intrinsic Elements—Eschatocol

- Corroboration
- Complimentary clause
- Attestation (i.e., writer)
- Qualification of signature
- Secretarial notes (e.g., indication of attachments)



Annotations

Additions made to the record after its creation

- as part of the execution of an administrative procedure (e.g., registration in a land registry, authentication of signatures).
- reflecting subsequent actions taken *to handle the activity or the matter* in which the record participates.
- reflecting subsequent actions taken *to handle the record for records management purposes.*



Contexts

- Juridical-Administrative
- Provenancial
- Procedural
- Documentary
- Technological



InterPARES Project

Dr. Luciana Duranti
Project Director

Medium

It was difficult to include the medium in the model because, although necessary to the existence of the record, it is no longer inextricably connected to the record, does not contain the record, but a bit-stream, and its choice by either the creator or the archivist is either arbitrary or based on motives linked to the maintenance and preservation of the record rather than to its function. For these reasons, the medium is not a factor in establishing the authenticity of records. Now it is to be considered part of its technological context.



Diplomatic Analysis

- It consists in responding to questions about the entities we need to identify and to authenticate, after comparing them with the template.
- If the observed entity is not a record, the questions regard whether it should be a record given its function and use. If it is not authentic, the questions regard why.



Usefulness of Diplomats For Understanding Electronic Records

- It demonstrates when systems are designed to contain data rather than records
- Shows what attributes of a record's identity are implicit in the system and need to be made explicit and linked to the record to ensure that they are not lost when the record is removed from the system
- Supports the identification of the requirements for a trusted recordkeeping system and preservation system



Problems

- The classic concept of record limits our capacity to understand electronic systems containing a variety of complex entities that do not correspond to it
- That which is known is not always very useful to understand the unknown
- Theory, which decontextualizes the record, is not useful to deal with the variety and complexity of systems: a complementary inductive approach is necessary



How To Make Diplomatics More Useful

- The definition of record must be more flexible and sophisticated, and consider the modes in which a record exists
- The identification of the records components and elements of form must be more detailed, and the interpretation of their function must be more in-depth
- We have to consider the possibility of substituting the characteristics of completeness, stability and fixity with the capacity of the system where the document resides to trace and preserve each change the record has undergone
- We have to consider the possibility of developing a special diplomatics based on types of creators, types of functions, or types of digital documents



A Program of Research

- But this is already the embryo of a program for further development of the science of diplomatics.
- The validity of the theory is still unchallenged, but the scope must be broadened and the content must be refined and deepened
- When everything is new and complex, diplomatic theory is our only reference point as it provides rigour in the analysis of concepts, procedures, methodologies (e.g. originality and emulation)
- It is now a different science, but still internally consistent.

