Beyond Paper

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The authors outline the way in which documents as social objects have evolved from their earliest forms to the electronic documents of the present day. They note that while certain features have remained consistent, processes regarding document authentication are seriously complicated by the easy reproducibility of digital entities. The authors argue that electronic documents also raise significant questions concerning the theory of 'documentality' advanced by Maurizio Ferraris, especially given the fact that interactive documents seem blur the distinctions between the static documents (or 'inscriptions') which form Ferraris's starting point, and dynamic software processes. The authors argue further that the Ferraris view in the case of legal documents is flawed because of the fact courts may treat contractual obligations as enduring even in spite of a complete absence of inscriptions. Finally, the authors note that traces in brains, another important family of inscriptions on the Ferraris view, differ significantly from genuinely documentary inscriptions by their lack of public inspectability.

Documents and social reality

Reid, Reinach, Austin, Searle and others have opened our eyes to the fact that there are social acts which are *performative* in the strong sense that they give rise to social entities such as claims and obligations (Reinach, 2012; Schuhmann and Smith, 1990). Social acts can be executed in a variety of different media, and of these the most evanescent is the spoken word. But the transient character of speech has led over time to the demand that speech acts be reduced to some more enduring form. Thus where transfers of property, contracts, marriages, and legal decisions were initially performed through speech, they are today typically transcribed in written form for the sake of ensuring later proof and support against adverse claims. The results are 'documents' in what we shall here take to be the basic sense of this term.

In some cases documents are mere recordings of events leading to the creation of social objects. This is so, for example, in the case of a video recording of a wedding. A document of this sort may still serve to provide evidence of existence or authenticity, but it does not itself bring any social object into existence. Documents serve a performative role for example when the completion of a document creates a social object such as an easement or an award of damages. Some documents play both recording and object-generating roles: the issuance of a paper guarantee, for instance, brings a certain sort of right into existence and provides evidence of this right in the future.

For much of human history, documents have existed as garden variety physical objects – stone tablets, parchment scrolls, dollar bills – entities whose locations in time and space could be known with certainty. The history of humanity can be traced in such artifacts, including the evolution of abstract ideas as recorded in their concrete expressions in a process that has given rise to institutions such as libraries and scientific journals. For the documents of interest to us here, however, it is other sorts of institutions that are of interest – institutions such as civil registries, safety-deposit boxes, licenses – as well as associated technologies such as signatures and counter-signatures (Kafka, 2012). These institutions have arisen as means of securing against manipulation and loss of documents whose effectiveness in supporting the execution of performative acts and in providing subsequent evidence is a function of their authenticity.

Claims, obligations and many other types of social entities of deontic significance evolved, of course, as institutions of customary law, and thus before the appearance of inspectable, securable, amendable documents of any sort. Hence there is no logical reason why material documentation would be necessary for the continued existence of objects such as these (for example debts and bonds of marriage). But the transient character of speech and of associated memories led inexorably to the evolution of more robust systems of recording, which came to encompass progressively more powerful technologies to support the creation and processing of documentary records. Titles, deeds to real property, marriage certificates, and court judgments, trial records, subpoenas and summonses were recorded in registries by clerks, stamped by authorized officials, and stored under controlled conditions.

As a further development in this process of evolution there arose the legal and commercial institutions characteristic of modern societies. Artifacts such as letters of

credit and bills of exchange did not merely provide a practically useful augmentation of existing legal and commercial institutions; they made possible entirely new sorts of institutions such as merchant banks, credit markets, and insurance underwriting – institutions which deal in what we might call *documentary entities* (de Soto, 2000; Smith, 2012, 2014).

Documents and citizenship

Another sort of case is that of citizenship, which (in the U.S. at least) is evidentially tied to birth registration documents. DK's birth certificate is maintained in some filing system at the Office of the Erie County Clerk in Buffalo, New York. There the original document, which was properly stamped and duly recorded before entering the County filing system, forms part of a system of further documents which record its chain of possession, marking the various times the document has been pulled or copied (for example in connection with DK's migration to The Netherlands) and thereby tracking its various uses. While DK has been domiciled in different locations in the course of his life, the original document recording the particulars of his birth has enjoyed a fixed location, and official records of its movements and uses, as well as other indicia of authenticity, have helped protect its integrity as evidence.

Citizenships are social objects because nations are social objects, and because whether a person belongs to some nation as a citizen is determined by some web of beliefs and rules and practices agreed to either implicitly or explicitly by the members of certain defined groups. DK's citizenship is not dependent on the existence of any specific token document; but to be demonstrated with confidence to others it requires that certain documents can be produced. If DK's birth certificate and passport are lost and the corresponding registries destroyed, his citizenship does not disappear; but questions of proof become suddenly much more complex. Because citizenship is important we have developed mechanisms to create and ensure the security of the documents that serve as evidence of this social object. But this evidence and the object itself are two different matters.

Most nations recognize citizenship or nationality based upon either the notion of *jus sanguinis* (right of blood) or *jus soli* (right of soil). In the former case it is the fact of having a parent of a certain nationality, in the latter of having been born within the borders of some territory, that determines one's citizenship. (Some, like the U.S., use both principles.) Both documents and testimony based on memories serve as evidence

of these sorts of facts. But there is a layer of brute facts (of heritage or location of birth) that are not created by documents or memories, and it is such brute facts that serve as the foundation for the social object of citizenship. The absence of traces in any medium evidencing these brute facts does not mean that the facts themselves will cease to obtain.

Grades of documentary dependence

The law has provisions that recognize this distinction between (brute) fact and evidence, as for example in the U.S., where a natural born U.S. citizen who can find no evidence of his or her natural birth in the U.S. or to a U.S. parent is not thereby automatically deemed a non-citizen. The indicia of a social object are not, under the law, the same as the object itself. Indeed, there are types of social object which are created by a performative document, but which are yet not such that the object is thereby eliminated with the destruction of the document. To give some idea of the sorts of ontological dependency relations at issue here, we distinguish the following cases:

	Social Object	**Relation**	**Document**
Customary Law	common law marriage	no dependence	
Post-Customary Law	right to payment right of entry criminal judgment search warrant	specific dependence	bearer bond visa criminal conviction right to inspect
	citizenship civil law marriage mortgage civil penalty	prototypical dependence	birth certificate marriage license mortgage note civil judgment

To say for example that a

right to payment is *specifically dependent* on a *bearer bond*

is to assert that a given instance of the former cannot exist unless some specific instance of the latter also exists; if the bearer bond is destroyed, then the right to payment ceases to exist also. Similarly, it may be that a specific right of entry (guaranteed through the issuance of the specific visa document stapled into DK's passport) does not exist unless this individual visa, with these stamps and signatures, also exists. In symbols:

> *a* is specifically dependent on *b* =def. individual *a* cannot exist unless individual *b* exists

A slightly weaker variety of specific dependence is involved in those cases where, while a document of a certain type must indeed exist, the original document can in case of loss be replaced by a copy. A case of this sort is illustrated by the requirement of commercial airline pilots to sign a flight release before departure. Even though the flight release document itself is typically received by email, it must be printed out on the cockpit printer and the resulting signed paper document (or a signed copy thereof) handed over to the ground staff before the aircraft can leave the gate.

A still weaker sort of dependence – called 'prototypical dependence' in the table – is illustrated by the following example:

civil law marriage is *prototypically dependent* on a *marriage license*.

The dependence in question turns on the fact that, while the institution of civil law marriage requires that for each marriage a license is issued, any given marriage would not cease to exist if the associated license were destroyed. The license can in principle always be replaced in case of loss. But even if it is not replaced this will not violate the continued existence of the marriage. In symbols:

> *A*s are prototypically dependent on *B*s =def. an *A* cannot exist unless, in the prototypical case of an *A*, some associated *B* exists

The status of *natural born citizen* (in the US) is merely prototypically dependent in this sense on some birth certificate. Thus here again the given status will not be lost if the certificate is destroyed, and it may even obtain if no certificate was ever issued. The status of *naturalized citizen*, in contrast, is an example of the sort of weakened specific dependence where an original certificate of naturalization is indeed required, but where the status in question is tolerant of loss or destruction of this certificate.

In realms governed by what, in the Table, we have called ‘Post-customary law’, institutions such as registry offices have grown up that allow documents to serve as shortcuts to verification of a social object’s existence; these institutions and the documents to which they relate do much to shape the way the corresponding varieties of social objects are treated in typical cases even though, in cases of prototypical dependence, their applicability is not essential in every case to the existence of the corresponding social object.

Attachments

In some cases of specific dependence the pertinent document must not merely exist, it must also be attached (or at least stored in physical proximity) to other entities (to other documents, as in the case of the visa in your passport, or for example to your car or boat in the case of a vehicle registration plate or vessel mussel sticker). The institution of the mortgage, for example, could not exist without an associated system for storing and managing mortgage notes, which, by being attached to title and other documents, provide evidence for the existence of the loan in such a way as to encumber the associated real property against further obligations. Attachments of these sorts are designed to make the attached document not merely inspectable but prominently visible whenever the target of attachment is consulted. In the case of the mortgage note, for example, its attachment to the title document is designed to prevent the same real property from being used as collateral multiple times.

Electronic documents

Still today actions by the state in criminal matters are typically only valid and enforceable when issued on paper. Accused criminals tend to have stronger protections than other subjects of bureaucratic processes, and, following a practice that has remained virtually unchanged for eight centuries, physical exchange of paper documents is still seen as providing stronger protections than, for example, verbal communication. Thus a signed warrant for someone’s arrest (a criminal summons) and most other documents that initiate criminal actions require paper documents to be transferred by hand to the accused. Invalid service, or flaws in the documents themselves, can invalidate the action and require starting anew.

Even here, however, a small number of recent examples have been documented in which service of process in civil matters was allowed by the courts to take place

electronically, for example because service of paper documents to foreign defendants failed (Schultz, 2009). And in very many other areas we see the systems for document storage and management being incrementally transformed as we move beyond paper to the world of digital documents. Examples are the transition to electronic boarding passes at airports or from paper money to electronic money surrogates such as credit cards and electronic money transfers. Certainly many features remain stable in this transition, including:

1. the distinction between a document and some image or representation of the document in the same or in another medium;
2. the necessity for some physical medium for creation and storage of the document and of eventual copies;
3. the liability of being subject to challenges, for example concerning a document's authenticity;
4. institutions and technologies, including security features, designed to track usage and to identify and to guard against manipulations and loss.

Paper documents are easily stored in secure locations and their movements easily tracked and registered. Some paper documents – such as passports and visas and driver's licenses – have the advantage that they can be carried on your person and used for purposes of validation of your identity and of your right to be in a certain place or to be performing a certain action. For paper documents, as well, the chemistry of paper and ink sets limits to fraudulent manipulation. Electronic documents, in contrast, can be very easily copied and redistributed; exact duplicates (tokens) of even very large document collections can be maintained in multiple places at once. And so, while the distinction between *original* and *authentic* can still be drawn in the realm of e-documents, this distinction is gradually losing some of its purchase because of the existence of perfect copies.

Matters are made more complicated, too, when it comes to the interactions between persons and electronic documents, because direct eye-balling of paper documents is now replaced by interactions mediated by software. A slab of stone, a papyrus scroll, or a printed book, each stores its inscriptions in human-readable form. Here the mediation between persons is limited only by the need for both writer and reader to understand the symbols used. The fact that traditional documents can be directly perceived as physical objects allows also the use of artifacts such as wax seals, stamps, registration numbers, signatures, and other human-readable forms of

authentication and allows easier tracking of and control over the geospatial distribution of the document itself (guaranteed, for instance, through the fact of being filed in some official registry).

When a document is composed on a word-processor and stored on some physical medium control over which is retained by some duly accredited official, then the potential for secure handling of the document is not much different physically speaking than in the case of traditional media. In place of patterns of ink on paper we have patterns of electromagnetic excitation on some officially secured hard drive. An electronic document of this simple sort exists as a relatively uncomplicated, spatiotemporally isolated entity, and could conceivably still be an authentic and original token against which we could measure the validity of the social object created and memorialized with its aid. As with more tangible documents, testing the authenticity of documents stored in computerized media involves examining their physical makeup, place of storage, chain of custody, and so forth. Legal regimes around the world now routinely inquire into these factors (as they have done hitherto with paper, stone, and other varieties of documents) for example by questioning custodians, who can testify concerning who might have gained access to given computer artifacts, or by questioning experts in digital forensics who can testify regarding features of the original medium of creation and storage (Reiniger, *et al.*, 2011).

Documents in the cloud

Gradually storage of electronic documents on user-owned machines and media is being supplemented and in many cases replaced by storage on the cloud. There, also, similar protections can be employed to provide document security and to allow tracking of provenance and an audit trail of changes. Both institutional and technological safeguards are being adopted to help ensure that storage of electronic documents in clouds does not create new legal problems (Reiniger, *et al.*, 2011). These safeguards and the problems they address are recognizable derivatives of those already encountered in the realm of traditional documents (Liu, *et al.*, 2011).

Cloud infrastructures are marked by distributed and redundant storage. These features make clouds valuable because they reduce the likelihood of data loss. Users themselves do not need to be concerned with managing their documents (for example with maintaining the safety and physical integrity of storage media, or with the issues

which arise when documents need to be transferred from one storage medium to another). The obsolescence problem faced by all who have used software and created electronic documents is addressed by distancing users from the media in or on which their documents, software, and data are stored and even created. This offers advantages over traditional desk-based computing turning on the fact that data are stored and software executed on servers that are physically remote from but still, depending on the security restrictions in place, readily and ubiquitously accessible to their users. (Howell-Barber, *et al.*, 2013)

In parallel with these developments is a further process, already initiated with the very earliest examples of interactive software such as MYCIN or ELISA (Buchanan, *et al.*, 1984; Rajeev, 1996), whereby the line between static *documents* and dynamic *software processes* becomes ever more unclear. An internet vendor order page is the result of transforming the traditional filled-out paper form into an *interactive document* which performs a series of services for the customer, including helping in selection of features such as size and color and dynamically calculating and re-calculating the total bill. A reviewing site such as tripadvisor.com transforms the traditional (paper) restaurant review into an interactive document that interoperates with what may be thousands of other reviews to create a multi-dimensional quality comparison of the restaurants in a given locale that is subject to continuous update. In these and other ways internet and cloud technologies are providing ever more powerful strategies for collaborative agency, not least because they provide on many levels resources for the automatic recording of the processes taking place when humans interact.

On 'Documentality'

The philosopher who has done most to draw attention to the effects of this automatic recording, and thus of the increasing role of documentation in contemporary society, is Maurizio Ferraris in his theory of what he calls 'documentality.' Ferraris, however, enlarges the range of entities falling under the heading of documents to include all traces (or "inscriptions") of the existence of any social object, *including memories in people's brains*. He then posits that all social objects exist by virtue of such inscriptions, coining the slogan 'nothing social exists outside the "text".' What he means by this is that the material basis for the existence of all social objects is *some inscription in some substrate*. In some cases this will be an inscription in some

external artifact such as a gravestone or an RFID chip. In other cases, as Ferraris sees it, it will be inscribed directly upon the material of the mind itself (Ferraris, 2009; 2011).

An approach along these lines brings the advantage, as Ferraris sees matters, that it serves to demystify the ontology of social objects – including those social objects that existed before the invention of writing – by providing all of them with the same sort of material foundation. We shall explore in what follows whether this attempt at demystification is successful, but for the moment we note two important distinctions between traditional (for example paper) documents and traces in people's brains.

The first is that documents as traditionally understood possess the quality of public visibility, and thus of *inspectability*, a quality that we saw as being vital to the ability of documents to serve in the performance of social acts. Clearly this quality is missing for those inscriptions or traces which exist, as on Ferraris's view, in people's minds. His approach thereby breaks the link between documentality and the execution of social acts, for while such acts can certainly be executed in a wide variety of different media – paper, smoke, even facial and bodily gestures, as well as speech and digital media – they can of course not (or at least not yet) be executed through the medium of traces in the brain.

The second distinction has to do with the way in which traditional documents endure through time. For while memory traces can indeed endure, they are in this respect subject to certain obvious biological limits, and they cannot, for example, be secured against manipulation or loss, or called up at will by means of appropriate protocols or technologies. (Memory traces are not analogous to the contents of a hard drive, or of a safety deposit box in a bank.)

By conceiving documents as passive and static "traces," Ferraris seems also to neglect the degree to which software is ineluctably transforming documents into something active and dynamic – something that exists in a realm beyond paper. Certainly your copy of a software program such as Turbotax exists initially as a mere trace or inscription on your hard drive (or on your allocated portions of the cloud). At the beginning of its existence, therefore, it satisfies the requirements for documents as Ferraris conceives them. But this is of course the least interesting phase in the life of your copy of the program. For when you start to use the program it does not merely store the information you enter; it allows you to create a new social object – your tax form – and then to interact with this social object as it progressively evolves, in a

process which can be compared to a kind of negotiation with (a virtual surrogate for) the tax authorities. The program then assists you also in handing off the results of your efforts to these authorities, where your tax form will continue its progressive evolution within a new sort of (government-driven) digital environment.

In his introduction to this *Monist* issue Caffo writes:

> For the theory of documentality, the constitutive rule of social reality is "Object = Inscribed Act", where "inscribed" is equal to "recorded". That is: a social object is the result of a social act (that is, an act involving at least two people), characterized by its being recorded on some substrate, including the minds of the people involved.

It seems to us, however, to be an inadequate picture of the social object that is the result of running the Turbotax software to describe it as an 'inscribed act'. The total process is not simply more complex than one of sheer 'inscription' or 'recording' – it is something of a different type, involving *inter alia* deontic and mathematical dimensions. It is inadequate, also, to conceive the social object spawned by this process as the result of an act 'involving at least two people'. There are, certainly, inscriptions (when I enter data through the keyboard). And these inscriptions – or their sequellae – interact. But the interactions in question occur between a person and a machine.

A further set of problems for the identification of 'Object' with 'Inscribed Act' arises where a social object such as an obligation is created through an oral contract. Certainly we can make a recording of the salient exchange of words in order to memorialize the coming into existence of the contract. The recording is then an Inscribed Act in Ferraris's sense. But as we have already noted, the recording is not itself performative; *it* does not bring anything into being, and the contract and its associated claims and obligations would have existed even independently of the recording. A written contract, in contrast, *is* performative: here the document, upon being executed, both creates and memorializes the obligation.

The tough case for Ferraris, therefore, arises where an oral contract is made without recordings and without witnesses other than the contracting parties. In what way is there a document that instantiates the social fact of the contract in this case? If we are to take the Ferraris thesis literally, we need to view the contract as inscribed in the memories of the parties to the contract. But these memories are precisely distributed among the parties; they do not form a single 'inscribed act' that could

serve as physical (here: neurophysical) foundation for the Object that is the obligation arising through the execution of the contract. Or rather, they could do this only if two memories could somehow (mysteriously) be one.

The problem is one of circularity: Ferraris seeks to explain the origin of social reality in (physical) documents; he extends the latter realm to include also memories. If a collection of pertinent memories is to serve as the unitary physical foundation for a social object such as an obligation, however, then this means that the collection is already itself a social object, and thus some account is required of how *it* came into existence and how it is to be understood ontologically. Now, however, the very same arguments could be marshaled against Ferraris's own theory that he himself, in his contribution to this issue of *The Monist*, marshals against the doctrine of 'collective intentionality' advanced by Searle in *The Construction of Social Reality* (1995).

A further problem for Ferraris is that, as we saw above, and as the laws of evidence make clear, an obligation can endure even where memory traces do not survive. The two sorts of entities manifest different sorts of time behaviors. An obligation does not wane, for example, when its beneficiary begins to suffer from dementia. Where memory traces come and go with time, claims and obligations endure continuously. They cease to be only when the contract is brought to an end, for example through some new social act of agreement or waiver, or through an act of fulfillment or breach by the obligated party.

It is for this reason that it is not memories that matter legally but rather the content of the contract as expressed by the parties during or after agreement. A court can reconstitute a forgotten contract on the basis of circumstantial evidence that it was formed, evidence obtained by delving into the original intentions of the parties through indirect inference (for instance, when the present possession of some object by one of the parties is taken to imply ownership). Typically the court must seek to determine the content of the original agreement between the parties precisely because there have arisen conflicts in their memories.

Ferraris asserts that traces in minds may weave the "text" that, on his view, comprises all of social reality (Ferraris, 2011). And it is certainly true that for many varieties of social objects we can assert dependence relations between the processes through which these objects are brought into existence and associated processes in the minds of those involved. Even a moment's reflection, however, should reveal that it is not static traces but dynamic processes that are responsible for the creation of such

entities – for example processes of deciding, agreeing, or speaking, or signing. Our memories of such processes are, in contrast, at best mere side effects. Certainly if the results of dynamic processes are to endure then traces must be laid down, and we believe that Ferraris is on to something of great importance with his ontology of the (contemporary) social world as a matter of inscribed acts. But we believe that he goes in exactly the wrong direction with his proposal that memory traces, too, should be incorporated into the realm of what he calls 'inscriptions.'

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