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The Migration of Bibliographic Methodology

Zachary Thomas Eggemeyer

Research question: Scholars have clearly established the material nature of computational processes. In doing so, scholars have also established a connection between the methodologies used by book historians and bibliographers to study print documents and the methodologies used by digital humanities scholars to study digital files. Therefore, it stands to reason that the traditional forensic methods used by book historians and bibliographers to detect forgeries in print documents could be applied by digital humanities scholars to detect a digital forgery. But what exactly are the traditional forensic methods that have a clear digital counterpart? And what would it look like for these to be used to detect a digital forgery?

Edmond Locard created what history remembers as the world's first police crime laboratory in 1910. Today, he is most famous for a forensic axiom: Locard's Exchange Principle. This principle states, "with contact between two items, there will be an exchange of microscopic material […] such as hair, pollen, paint, and soil."[1] What do pollen and soil have to do with books?

In 1932, John Carter and Graham Pollard, both young men getting their start in the rare book trade, compared notes on separate bibliographic studies. Realizing their work was intimately related, the young scholars embarked on an empirical case study leading to the exposure of a caché of forgeries and resulting in the publication of, the now widely known, *An Enquiry Into The Nature of Certain Nineteenth Century Pamphlets* (1934). This work established a new forensic precedent for the detection and study of forgery. In their methodology, which continues to be used, and improved upon, by antiquarian book dealers, textual critics, and book historians, we detect Locard's famous axiom.

Scholars have clearly established the material nature of computational processes, and in doing so they have also established a connection between the methodologies used by book historians and bibliographers to study print documents and the methodologies

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[1] W. Jerry Chisum and Brent E. Turvey, *Crime Reconstruction* (Amsterdam: Elsevier, 2007), 24.

used by digital humanities scholars to study digital files. This paper will examine the

bibliographic methodology used by book historians to detect a print forgery, and it will

attempt to show those same methodologies can be applied to digital documents by digital

humanities scholars to uncover digital forgeries. To accomplish this it will be necessary

to examine a known case of forgery and detail the exact methods used to uncover it, as

well as look at the methods and tools available to digital humanities scholars. Doing this

should allow us to map the forensic methods of analytical bibliography to their digital

counterparts. The goal will be to establish a verifiable process to aid future scholars

looking to scrutinize digital documents. Noah Wardrip-Fruin uses a similar approach in

his reading of Christopher Strachey's love letter generator the Manchester Mark 1, "First

we need to identify some features of the work's process from which to begin our

interpretation. One approach to this is comparison—considering two or more processes

together, and seeing which shared and differing features emerge."[2]

A Tangible Forgery

"Ultimately analytical bibliography seeks to use physical details as a way of determining

something about the history of the book, usually its manufacturing history,"[3] says Vander

Meulen. The precedent for scrutinizing forgery set by Cater and Pollard in *An Enquiry

Into The Nature of Certain Nineteenth Century Pamphlets* (1934), looks at paper,

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[2] Wardrip-Fruin's fascinating study of Strachey's work begins with the idea that the process by which a work is created often tells a richer history than the work itself. Erikki Huhtamo and Jussi Parikka, eds., *Media Archeology: Approaches, Applications, and Implications* (Berkeley: University of California Press, 2011), 309.

[3] Vander Meulen, David L. "Thoughts on the Future of Bibliographical Analysis."*Papers of The Bibliographical Society of Canada* 46, no. 1 (2008).

typography, collation of the text, negative evidence of the author, publisher, or printer, and provenance and condition of surviving copies.

Knowing that they could identify the material used to make the paper on which the pamphlets were printed by the presence and shape of the fibers, the young bibliographers examined under a microscope the paper of all the documents in question. What they found was that the composition of the paper on which the pamphlets were printed would not have been available to a publisher at the date on the title page. Similarly, looking at the typeface in which the texts are set reveal histories that are incongruent with the production of the various typefaces employed. For example, after studying type specimens from the largest type foundries in England during the years 1880 through 1883, they learned that no foundry used 'kernless'[4] type prior to 1880—in fact, it didn't even exist—and that a large portion of the pamphlets under scrutiny, which claimed to be printed between the dates 1842 and 1873, were printed using kernless type.

One of the most significant contributions Carter and Pollard made to bibliographic analysis is the "very important distinction drawn between negative and positive evidence of forgery;" both the paper test and the typography test are examples of positive evidence; negative evidence hinges on the fact "no known copy is known with the author's signature."[5] Categorizing evidence in this way allows the scholars to class forgeries in still more specific terms. A binary forgery refers to those forgeries "of [a] known and genuine original," while a creative forgery refers to those forgeries "whose

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[4] "The majority of "modern face" romans have only two kerned letters in the lower case, f and j. A "kerned" letter is one in which a portion of the face of the letter extends beyond its body." John Carter and Graham Pollard. *An Enquiry into the Nature of Certain Nineteenth Century Pamphlets* (New York: Haskell House Publishers, 1971), 58.

[5] Nicolas Barker, "The Forgery of Printed Documents," in *Fakes and Frauds: Varieties of Deception in Print and Manuscript*, ed. Robin Myers and Michael Harris (Winchester: St. Paul's Bibliographies, 1989), 113.

falsity was obscured by the fact that there was no known original."[6] Being able to classify

deceptions in this distinctive way is a point I will return to later when I discuss digital

forgeries.

The caché of forgeries uncovered by Carter and Pollard in *An Enquiry* exemplifies

the boon of scholastic rigor. The result of their labor also points to a mode of research

that is empirical so as to be admissible in a court of law, while also being flexible enough

to be applied to a multitude of objects through a host of disciplines. Rather than being

strictly tied to the objects of study, their methods denote a way of thinking. Greg

punctuates this notion, "[Bibliography] is a system of investigation and a methods of

description, and if, with minor modifications, it can be made to apply to clay cylinders

and rolls of papyrus as well as to codices of vellum paper [or, one might add, to the

physical entities we call electronic texts], so much the better."[7] Vander Meulen responds

by pointing out that while with computers the production and transmission of text differs

from previous methods, "the principles governing the analysis remain the same […] the

artifacts that result, rather than the statements about the artifacts, provide the primary

evidence for the history of those artifacts."[8] Kirschenbaum say that, "computer forensics

is the natural counter part to textual criticism and physical bibliography;"[9] and looking at

how the methods used by Cater and Pollard map to digital forensic methods will elucidate

how practitioners might study an electronic text they suspect may be a forgery.

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[6] Ibid, 114.

[7] W.W. Greg, "What is Bibliography?" *Transaction of the Bibliographic Society* 12 (1911-13): 39-53 (p.42); reprinted in his *Collected Papers*, ed. J.C. Maxwell (Oxford: Clarendon, 1966), 75-88, and in *Sir Walter Greg: A Collection of His Writings*, ed. Joseph Rosenblum (Lanham, MD: Scarecrow, 1998), 85-96, quoted in David L. Vander Meulen, "Thoughts on the Future of Bibliographical Analysis."*Papers of The Bibliographical Society of Canada* 46, no. 1 (2008), 28.

[8] David L. Vander Meulen, "Thoughts on the Future of Bibliographical Analysis."*Papers of The Bibliographical Society of Canada* 46, no. 1 (2008), 28.

[9] Matthew G. Kirschenbaum, *Mechanisms* (Cambridge: The MIT Press, 2008), 16-17.

Digital Methodologies

Building a case for an event is the same whether that event occurred with or without the use of computational processes. Digital forensic investigators, like analytical bibliographers, reconstruct a process. As an investigator amasses their dossier they will look for certain kinds of evidence to "sequence events, determine locations, establish direction or establish the time and duration of actions."[10] And just as with the case Carter and Pollard built, some of it will be negative evidence and need the support of positive evidence if it is to hold water in a court of law. In crime reconstruction the clues are considered in terms of being, "*relational*, that is where an object is in relation to other objects […] [or] *functional*, the way something works or how it was used, or *temporal*, […] based on the passage of time."[11] Looking at Carter and Pollard's methods retrospectively we can see that in the case of typography and paper their analysis trends toward the functional and the temporal, while in the case of collation the evidence would be relational, and we might say that any negative evidence of the author, publisher, or printer is a blend of the three categories.

More precisely, digital forensics practitioners are trained to salvage deleted data, uncover obfuscated data from a file system, and authenticate digital documents. Kirschenbaum has noted the parallels[12] between questioned document examination and computer forensics, which is also linked to forgery identification and the emergent practices of new bibliography in the 1930s. It's unlikely, however, that a computer

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[10] Eoghan Casey, ed., *Handbook of Digital Forensics and Investigation* (Burlington, MA: Elsevier, 2010), 13.

[11] Ibid, 13.

[12] Matthew G. Kirschenbaum, *Mechanisms* (Cambridge: The MIT Press, 2008), 47-48.

forensic investigator would be the first individual to discover or study a digital forgery. Digital humanities are uniquely positioned to detect and study digital forgery.

Software studies, critical code studies, and platform studies all treat their subjects with the same ineluctable materiality that is afforded to books, printing, and publishing by bibliographers, textual critics, and book historians. The work undertaken by these three disciplines highlight some considerations that do share parallels with print documents despite their computational occupation; for instance, the notion of "copy" possesses greater complexity than it did in pre-digital times, Parikka argues:

> In digital software culture "copy" is used in two different ways (1) in the context of file-management and as a new phase of cultural reproduction and (2) as part of copy/paste—a cultural technique and aesthetic principle. The two lineages constantly overlap in the modern history of media technologies, where copying, the verb, designates a shift in the cultural techniques of reproduction from humans to machines, and copy, as a noun, presents itself as the key mode of becoming-object of digital culture—as easily reproducible and distributed packages of cultural memory.[13]

The ease with which computers allow us to reproduce information has altered the process of producing documents; while not impossible, it means that establishing a lineage for any particular text requires additional detective work than was outlined in the example of Carter and Pollard. In spite of the alacrity of the copy/paste culture,

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[13] Jussi Parikka, "Copy," in *Software Studies: A Lexicon*, ed. Matthew Fuller (Cambridge: The MIT Press, 2008), 71.

documents can still be uniquely identifiable with a little extra work. Privacy advocates

exposed that Word embeds a code unique to each individual user's system in every

document produced,[14] and a skilled practitioner of computer forensics should be able to

establish the "provenance" of a document using this information.

In *10 PRINT CHR$(205.5+RND(1)); : GOTO 10* (2013), a group of scholars

perform a deep reading of a single line of code, wherein they unpack the meaning and

function of each character, they write:

> Code is a peculiar kind of text, written, maintained, and modified by programmers
>
> to make a machine operate. It is a text nonetheless, with many of the properties of
>
> more familiar documents. Code is not purely abstract and mathematical; it has
>
> significant social, political, and aesthetic dimensions. The way in which code
>
> connects to culture, affecting it and being influenced by it, can be traced by
>
> examining the specifics of programs by reading the code itself attentively.[15]

This approach to the study of the material nature of code and the social and

historical impacts it has on our culture is yet another way one could establish the positive

evidence as to the lineage of electronic media. If we look again to the example of Carter

and Pollard's methods, we can detect strong parallels between this study of code and their

study of typography.

"Platform studies," which Kirschenbaum and Werner compare to book history, "is

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[14] Mike Ricciuti, "Microsoft admits privacy problem, plans fix," March 7, 1999,
http://news.cnet.com/2100-1040-222673.html?legacy.cnet.
[15] Nick Montfort et al., *10 PRINT CHR$(205.5+RND(1)); : GOTO 10*. (Cambridge: The MIT Press, 2013),
3.

characterized by close […] attention to detail out of the fundamental conviction that such

material particulars are ineluctably part of the history of communicative objects."[16]

Platform presents an especially unique problem for those interested in the study of digital

forgery (an many other computational processes, for that matter) because obsolescence is

a fundamental reality of our interface with the digital world. Even the latest software and

hardware are mere months from being out of date. Certainly, there are obsolete practices

from print culture that now seem arcane, but the material results of that now strange labor

are still accessible to us with little or no technical aid. Whereas certain proprietary

software cannot be accessed without the
hardware on which it was written, assuming it
still exists.

An Imagined Digital Forgery

[17]   [18]

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[16] Matthew Kirschenbaum and Sarah Werner. "Digital Scholarship and Digital Studies: The State of the Discipline. *"Book History* 17, no. 1 (2014): 406-458. https://muse.jhu.edu/ (accessed March 16, 2015), 434.

[17] Andy Warhol, *Campbell's*. 1985. Computer graphic. 1020px. x 765px. <https://cdn1.vox-cdn.com/thumbor/bjCnqHRXoMIzvZx36xPa_4nP4VM=/1020x0/cdn0.vox-cdn.com/uploads/chorus_asset/file/2836234/2_Andy_Warhol_Campbells_1985_AWF.1398326245.jpg>, accessed May 10, 2015.

[18] Andy Warhol, *Andy Warhol*. 1985. Computer graphic. 262px. x 197px. < https://www.komando.com/wp-content/uploads/2014/04/1_Andy_Warhol_Andy2_1985_AWF.jpg>, May 10, 2015.

The University Computer Club at Carnegie-Mellon recently recovered computer-generated graphics produced on a Commodore Amiga 1000 by Andy Warhol in 1985. To recover the images the group undertook the elaborate process of "reverse engineering the proprietary format in which the files were originally created and stored."[19] This highlights one of the most formidable challenges anyone interested in studying digital texts will face, outdated, difficult to access technology.

Let's imagine for a moment that the recovered Warhol images are forgeries. Considering this, the first question we are inclined to ask is: Would it even be possible to create such a forgery? I think in this case the answer is yes. It's conceivable that a programmer or computer guru could surreptitiously create the images if they had access to an Amiga 1000—somehow obscuring the time stamp and any embedded code that could link them to the crime, and hide the files in such a way that when they are discovered they appear undisturbed by any extra human contact since their purported creation. Stranger things have happened in the art world[20]. But what is this person's intent? Why go to all that trouble? It seems clear that this particular brand of forgery could only serve one purpose, to bolster the ego of its creator at the pleasure of having duped the art world; in the words of Carter and Pollard—a creative forgery.

It's difficult to imagine a scenario where a binary forgery of a digital text would be possible. To simply change the date on a digital document in an attempt to assert an alternative temporality would not require so much knowhow, but would be so easily uncovered by a digital forensics investigator it hardly seems worth the effort. In any case,

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[19] Kirschenbaum, Matthew G. "Software, It's a Thing." *Library of Congress* video, 33:31. September 29, 2014. https://www.youtube.com/watch?v=j6q_kYKo8WU&feature=youtu.be.
[20] See Alfred Lessing's "What is Wrong with a Forgery?" for an insightful look at Han van Meegeren's Vermeer forgeries and their reception.

what would be the reward? There is not yet a trade for "first edition" e-books which rules

out any pecuniary motivations, and at the end of the day people would be likely feel more

vexed than duped.

Conclusion

Anytime two bodies come into contact there will inevitably be an exchange of material.

Whether this transference of matter is visible to the unaided eye or is hidden in a

metropolis of copper wire behind a display screen, we can force material surfaces to offer

up their secrets through the application of forensic methodology. I think it has been

shown that while they may not appear compatible upon first glance, the methodologies

used by analytical bibliographers can also be used by digital humanities practitioners

interested in the study of electronic files; and that while at the present moment options for

digital forgery are limited and unlikely, it's important to be aware of how we might go

about scrutinizing questionable documents.

Just because we cannot presently conceive of a digital forgery, does not ensure

against forgery in the future. Prior to analytical bibliography, Allen H. Stevenson would

not have had the necessary methodology to execute such a colossal task it with the

adroitness that he did. Stevenson is famous for tracing with accuracy the 'states of

deteriorating watermarks in the so-called "Constance Missal" […] (which some believed

to be the first European book printed from movable type) correlated those marks with

examples in other books whose dates were known'[21] and dispelling the myth. Imagine the

immense wealth of cultural capital that is yet to be made to speak in the digital age.

      We may be at a point in the history of digital publishing that will come to be

characterized by its lack of standardization and cohesion, a time of perpetual

obsolescence that limits the range of bibliographic methodologies. Revolutions never

happen over night, but develop gradually over a continuum. With these adaptable

methods, the mutability of culture and technology present no obstacle; physical evidence

can tell its story.

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[21] David L. Vander Meulen, "Thoughts on the Future of Bibliographical Analysis."*Papers of The Bibliographical Society of Canada* 46, no. 1 (2008), 18.

Bibliography

Carter, John and Graham Pollard. *An Enquiry into the Nature of Certain Nineteenth Century Pamphlets*. New York: Haskell House Publishers Ltd., 1971.

Casey, Eoghan, ed. *Handbook of Digital Forensics and Investigation.* Burlington, MA: Elsevier, 2010.

Chisum, W. Jerry, and Turvey, Brent E. *Crime Reconstruction*. Burlington, MA: Academic Press, 2006. Accessed May 10, 2015. ProQuest ebrary.

Fuller, Matthew, ed. *Software Studies: A Lexicon*. Cambridge: MIT Press, 2008.

Galey, Alan. "The Enkindling Reciter: E-Books in the Bibliographical Imagination." *Book History* 15, no. 1 (2012): 210-247. https://muse.jhu.edu/ (accessed March 15, 2015).

Huhtanmo, Erkki and Jussi Parikka, eds. *Media Archeology: Approaches, Applications, and Implications*. Berkeley: University of California Press, 2011.

Kirschenbaum, Matthew G. *Mechanisms*. Cambridge: The MIT Press, 2008.

Kirschenbaum, Matthew G. "Software, It's a Thing." *Library of Congress* video, 33:31. September 29, 2014. https://www.youtube.com/watch?v=j6q_kYKo8WU&feature=youtu.be.

Kirschenbaum, Matthew and Sarah Werner. "Digital Scholarship and Digital Studies: The State of the Discipline." *Book History* 17, no. 1 (2014): 406-458. https://muse.jhu.edu/ (accessed March 16, 2015).

Lessing, Alfred. "What is Wrong with a Forgery?" *The Journal of Aesthetics and Art Criticism* 23, No. 4 (Summer, 1965): 461-71.

Montfort, Nick et al., *10 PRINT CHR$(205.5+RND(1)); : GOTO 10*. Cambridge: The MIT Press, 2013.

Myers, Robin and Michael Harris, eds. *Fakes and Frauds: Varieties of Deception in Print and Manuscript*. Winchester: St. Paul's Bibliographies, 1996.

Ricciuti, Mike. "Microsoft admits privacy problem, plans fix," March 7, 1999, http://news.cnet.com/2100-1040-222673.html?legacy.cnet.

Vander Meulen, David L. "Thoughts on the Future of Bibliographical Analysis."*Papers of The Bibliographical Society of Canada* 46, no. 1 (2008).

Vander Meulen, David L. "Thoughts on the Future of Bibliographic Analysis." *Papers of The Bibliographical Society of Canada* 46, no. 1 (2008).

Warhol, Andy. *Andy Warhol*. 1985. Computer graphic. 262px. x 197px. < https://www.komando.com/wp-content/uploads/2014/04/1_Andy_Warhol_Andy2_1985_AWF.jpg>, May 10, 2015.

Warhol, Andy. *Campbell's*. 1985. Computer graphic. 1020px. x 765px. <https://cdn1.vox-cdn.com/thumbor/bjCnqHRXoMIzvZx36xPa_4nP4VM=/1020x0/cdn0.vox-cdn.com/uploads/chorus_asset/file/2836234/2_Andy_Warhol_Campbells_1985_AWF.1398326245.jpg>, accessed May 10, 2015.