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Big Data and the Search for Balanced Insight in the Digital Humanities:
Macrosopic and Microscopic Reading of Citation Strategies in the *Encyclopédie* of
Diderot (and Jaucourt), 1751-1772

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Consisting of seventeen folio text volumes and eleven volumes of engraved illustrations – over seventy-seven thousand articles\(^1\) and twenty-one million words\(^2\) – the *Encyclopédie* (1751-1772) remains a monumental contribution to Western literature;\(^3\) its publication amid the countervailing pressures of an absolutist monarchy and the Catholic Church has been called “one of the great victories for the human spirit and the printed word.”\(^4\) Promoting free inquiry into all areas of knowledge and human endeavor, its editors (including Diderot) were threatened with the death penalty for sedition by the French government,\(^5\) and the work was condemned by Pope Clément XIII.\(^6\) At least one hundred and forty contributors\(^7\) produced this massive corpus, and – perhaps due in part to the pressures under which they worked – passages borrowed from other texts are occasionally included in *Encyclopédie* articles without attribution to their true authors or even acknowledgment as quotation. This is a major shortcoming for which the *Encyclopédie* has been criticized since its very inception.\(^8\) Even so, its accessible framing of philosophical and political ideas (many of which seem as current and crucial as ever) make the *Encyclopédie* a work of enduring interest for cultural historians and literary scholars, some of whom are now utilizing digital technology to develop new insights on the colossal text.\(^9\)
For example, in April of 2013, scholars Dan Edelstein, Robert Morrissey, and Glenn Roe published a paper in the *Journal of the History of Ideas* entitled “To Quote or Not to Quote: Citation Strategies in the *Encyclopédie.*” The article asserts that the frequent absence of proper attribution in the masterful Enlightenment work often reflects the deliberate use of a shrewd publishing strategy, designed to enable the *Encyclopédie*’s contributors to include in their articles lengthy passages from controversial works unauthorized for publication in Old Regime France.\(^\text{10}\) Calling this a “‘subversive style’ of non-citation,”\(^\text{11}\) the authors of the article offer compelling evidence – gathered using a formidable array of digital tools – to support their claim that the absence of appropriate citation in the *Encyclopédie* is a phenomenon which was deliberately created at least as frequently as it was caused by a “lack of significant editorial oversight, and a frantic production pace.”\(^\text{12}\) For example, the authors found that excerpts from John Locke’s *Essay Concerning Human Understanding* were attributed to their author roughly two thirds of the time in the entire text of the *Encyclopédie*, yet they also stated that none of the thirty-eight passages taken from David Mazel’s 1691 translation\(^\text{13}\) of Locke’s more radical *Second Treatise of Government* included attributive mentions of the work’s title.\(^\text{14}\)

However, new evidence that I have found raises questions about the idea that such a non-citation strategy was *consistently* employed. Indeed, there are at least two *Encyclopédie* articles that *do* include explicit (and positive) mentions of John Locke and his *Second Treatise of Government*: “Démocratie” (Democracy) and “Défense de soi-même” (Self-Defense), both written by Louis de Jaucourt\(^\text{15}\) and published in the fourth volume of the *Encyclopédie* in October 1754,\(^\text{16}\) well before the royal council withdrew the official *privilège* of the *Encyclopédie* in March 1759.\(^\text{17}\) Jaucourt’s decision to provide readers with such direct mentions of Locke’s *Second Treatise* in these two articles is surprising. After all, Edelstein and his colleagues find that Jaucourt – by far the *Encyclopédie*’s most prolific contributor,
having written more than 17,000 articles\textsuperscript{18} – may have employed the subversive non-citation strategy when preparing other Encyclopédie articles drawing from the Second Treatise, including “Gouvernement”\textsuperscript{19} (Government), published with the seventh volume in November 1757.\textsuperscript{20}

This paper argues that the mentions of Locke and his most subversive work in these two Encyclopédie articles are worthy of serious attention for the insight they can offer to scholars interested both in Jaucourt’s citation patterns and in his working relationship with the chief editor Diderot; however, they do not suffice on their own to unsettle the carefully gathered findings of Edelstein and his colleagues. Rather, they point to a need for what Edelstein, Morrissey, and Roe themselves call “micro-analysis,”\textsuperscript{21} which is necessary in order to (1) differentiate the use of this non-citation strategy from the contributors’ well-attested inattention to the necessary details of attribution, and (2) develop an understanding of how consistently the strategy was used. By way of research that builds upon and qualifies the findings of Edelstein and his colleagues, this paper will prove that the remarkable potential for discovery offered by big data to scholars of history and literature must be balanced by the ongoing practice of a more traditional “close” reading and erudite sleuthing, which in turn will provide researchers with a more holistic understanding of both the value and limitations of digital tools such as those utilized by Edelstein, Morrissey, and Roe.

To support this argument, it is first necessary to explain the innovative methodology developed by the three scholars, which involved several online databases and a computer program, known as PhiloLine, that is capable of detecting matches between digitized historical texts. The most important resource used by the scholars was the fully digitized version of the Encyclopédie, a component of the ARTFL Project hosted by the University of Chicago. Known more formally as the Project for American and French Research on the Treasury of the French Language, ARTFL constitutes North America’s largest collection of
digitized French texts, including (for free public use) all twenty-eight volumes of the *Encyclopédie*, searchable by key word and key phrase.

In order to determine whether the digital version of the *Encyclopédie* could be used alongside other tools to detect patterns in the *Encyclopédie*’s plethora of missing attributions, Edelstein and his colleagues began utilizing the PhiloLine program, a sequence aligner which they describe as “an open source data mining extension to the ARTFL Project’s PhiloLogic search engine.” Using techniques originally applied in bioinformatics for DNA sequencing, PhiloLine’s algorithms view documents as ordered, user-designed sets of $n$-grams, or groups with an assigned number ($n$) of words taken from a given sequence of text. By using these sets of $n$-grams (known as “shingles”) in a digital “reading” of assigned texts, PhiloLine can prove that the same passage has been used in at least two different documents.

For their research, Edelstein, Morrissey, and Roe used PhiloLine to compare the text of the *Encyclopédie* with that of roughly nine hundred French works (all digitized in FRANTEXT, another component of the ARTFL Project) originally published before 1765, meaning that the *Encyclopédie*’s contributors could have accessed them as they were preparing their articles. This utilization of PhiloLine, FRANTEXT, and the ARTFL *Encyclopédie* yielded a total of 5,763 results, where each result represented a match between a passage in the *Encyclopédie* and a passage in one of the selected source texts digitized in the FRANTEXT database. Edelstein, Morrissey, and Roe then used the sequence aligner on a selection of 1,658 titles contained in the Eighteenth Century Collections Online (ECCO) database, including works written in or translated into French and, again, published before 1765. Finally, the three scholars selected 1,359 French texts originally published between 1527 and 1720 from the “Making of the Modern World” (MOME) database, which provided them with another 4,393 results. In sum, by running the sequence aligner on the entire
Encyclopédie in comparison to thousands of French texts selected from three databases, Edelstein, Morrissey and Roe found more than 10,000 matches between passages in the Encyclopédie and passages from French texts which the original Encyclopédie contributors almost certainly consulted as they prepared their articles.

Given the immense amount of data that their experiment produced, the three scholars then decided to select the authors and works which they believed would yield the most striking insights regarding the nature of citation (or lack thereof) in the Encyclopédie.\textsuperscript{31} Thus, they focused on three groups of writers, described in their words as “major Enlightenment authors, including Voltaire and Montesquieu; canonical French authors, from Montaigne to Bossuet; and what might be considered controversial or subversive authors, such as Locke, Hume, and Helvétius.”\textsuperscript{32} In examining the data which they had collected through this scope, Edelstein and his colleagues effectively confirmed that works which benefited from open authorship and publication authorization by the French royal government were cited far more often in proportion to their overall usage in the Encyclopédie than those writings that were published anonymously or were not authorized.\textsuperscript{33} In other words, passages taken from the works of “canonical” authors such as Bossuet and Montaigne were attributed to their authors far more frequently than passages from more “subversive” writings.\textsuperscript{34} The idea that this pattern is indicative of a clever publishing strategy used by the contributors to sneak controversial material into their Encyclopédie articles is further supported by a previously stated fact that I will soon explore in greater detail: the three scholars found passages from David Mazel’s 1691 translation of Locke’s Second Treatise (entitled Du gouvernement civil) used without proper citation in the Encyclopédie far more frequently than excerpts taken from the English philosopher’s much less controversial Essay Concerning Human Understanding.\textsuperscript{35}
Simply stated, the experiment carried out by Edelstein, Morrissey, and Roe has done
much to prove that a wily strategy of non-citation existed in the Encyclopédie alongside the
occasionally careless failure of the contributors to attribute quoted passages to their true
authors. Knowing now that the frequent absence of proper attribution in the Encyclopédie
was likely the result of both deliberate strategy and hurried incaution, scholars must balance
the macroscopic work of Edelstein, Morrissey, and Roe with microscopic work, building on
the findings of digital research through a more traditional, close reading to determine how
consistently the strategy of non-citation was used; in so doing, researchers can untangle the
intended from the unintended in the Encyclopédie’s attributions (or lack thereof).

Indeed, one may demonstrate the necessity of tempering the macroscopic with the
microscopic (and thus refining current knowledge of how consistently the subversive strategy
of non-citation was used) through a simple keyword search of the digitized ARTFL
Encyclopédie. By typing “du gouvernement civil” – the name of David Mazel’s 1691
translation of Locke’s Second Treatise – into the search bar on the ARTFL Encyclopédie
Project website, one will find thirteen occurrences of this phrase in the entire corpus. Two
of these occurrences are direct references to Locke’s work, and are found respectively in the
articles “Défense de soi-même” and “Démocratie,” both written by Jaucourt.

In the first article, one finds this phrase in the last paragraph, embedded in the
following quote: “As for the rights that everyone has to defend their liberty, I am surprised
that Grotius and Puffendorf do not speak of them; but Mr. Loke [sic] establishes the justness
and extent of this right, in relation to the legitimate defense of oneself, in his work Du
gouvernement civil.”37 In the second article – “Démocratie” – one again finds the phrase in
the last paragraph: “I leave it to readers who wish to expand their horizons still further, to
consult … Locke’s Du gouvernement civil[.]”38 The results produced by Edelstein,
Morrissey, and Roe suggest that neither of these articles includes direct quotes from Locke’s
Second Treatise: “Not a single one of the 38 [Encyclopédie] passages borrowed from the French translation of Locke’s second Treatise is attributed, or even, for that matter, acknowledged as quotation.” However, Jaucourt mentions this title in both of the articles. If Jaucourt had indeed embraced a subversive non-citation strategy, then one can reasonably assume that the prolific encyclopedist would not have bothered to mention the controversial *Du gouvernement civil* in articles where it was not even quoted. Therefore, Jaucourt’s references to the Mazel translation of Locke in both “Démocratie” and “Défense de soi-même” suggest that he used the subversive non-citation strategy inconsistently at best.

Furthermore, there exists compelling historical evidence suggesting that Jaucourt’s decision even to mention the Mazel translation (albeit while refraining from direct quotation) was a bold one that would not make sense if he had consistently followed a subversive strategy of non-citation. In a 2004 article published in *The Historical Journal*, S.J. Savonius convincingly argues that David Mazel’s translation of 1691 was likely prepared with the intent of providing its Francophone audience with an anti-absolutist critique of the contemporary regime in France, rather than a mere justification for the revolution that had swept England just two years before. Savonius explains that Mazel, a minister at the Protestant church of Gabriac in the Cévennes, had been forced to leave France in order to escape a death sentence passed on him and a number of other Huguenot pastors. Mazel fled to Switzerland, but then moved to the Dutch Republic and finally to England. There, it is possible that Mazel collaborated with Locke himself on a French translation of the *Second Treatise*; evidence is lacking to prove that Locke carefully presided over the production of the translation, but the final page of Locke’s copy of *Du gouvernement civil* features his handwritten mark of approval.

The existence of Locke’s mark is particularly striking, given the subversive additions that Mazel made to the text as he translated it. For example, Mazel’s preface to his translation
offers an acerbic description of those monarchs and their supporters who would believe that only they can understand how truly to serve God, and who would order soldiers to harm those who do not hold the same beliefs. This aspect of the preface is reminiscent of Mazel’s own experiences with religious persecution in France. The translation appears even more suggestive in light of the fact that the thirteenth paragraph of Locke’s *Second Treatise* contains no reference to organizing opposition to an absolute monarch, although the corresponding paragraph in Mazel’s work does. All in all, the evidence gathered by Savonius – when considered alongside the fact that Mazel’s translation was *not* authorized by the French government when Jaucourt wrote “Démocratie” and “Défense de soi-même” – strongly suggests that Jaucourt’s titular references to the translation at the end of both *Encyclopédie* articles are deviations from a possible strategy designed to prevent the names of subversive works from appearing in the *Encyclopédie*.

Further research must be carried out to determine whether this inconsistency is endemic to Jaucourt’s articles in the *Encyclopédie*. Salient literature suggests that this may be the case, given the chief editor Diderot’s dismissive perception of Jaucourt as something of an intellectual pedestrian, a mere compiler of information rather than an important scholar with unique gifts, admirable passion, and an eminently valuable dedication to the work at hand. Arthur Wilson writes that the prolific Jaucourt’s “intellect was not creative, but it was retentive, dogged, and quite accurate. His was a truly encyclopedic mind … and while it is easy to scorn such talents, as Diderot himself was inclined to do, it ought never to be forgotten that it was … Jaucourt who was as responsible as anyone for making the *Encyclopédie* the great focal point and gathering place of factual information” (emphasis added). Given the findings of Wilson, it is plausible that Diderot did not carefully read all of Jaucourt’s articles and thus failed to identify and revise Jaucourt’s deviations from the subversive non-citation strategy in “Démocratie” and “Défense de soi-même.” Bearing this
informed speculation in mind, one faces the possibility – increasingly embraced by French Enlightenment scholars – that Jaucourt was not a vapid compiler worthy of Diderot’s contempt, but instead a daring and calculating writer, perhaps with as much courage as Diderot himself. The thought-provoking findings of Edelstein, Morrissey, and Roe – coupled with a recent augmentation of scholarly interest in Jaucourt, as evidenced by a number of important presentations on his life and work – strongly suggest that now is the right time to search for patterns within (and causes behind) variations of citation and non-citation in Jaucourt’s *Encyclopédie* articles, and perhaps the articles of other contributors soon thereafter.

It is in this way that close reading of the *Encyclopédie* can help to add important dimension to those discoveries made by the use of digital tools. Although “macroscopic” work such as the experiment conducted by Edelstein, and Morrissey, and Roe can provide scholars with knowledge of the *existence* of a subversive non-citation strategy in the *Encyclopédie*, it appears at this time that only the “microscopic” reading of other researchers can (1) untangle deliberate omission from hasty mistake in the *Encyclopédie*’s myriad of missing attributions, and (2) provide some idea of how consistently the strategy was employed. The work carried out by Edelstein, Morrissey, and Roe is groundbreaking for the evidence that it offers in proving the existence of both cleverness and negligence in the *Encyclopédie*’s frequent lack of proper attribution. Most importantly, the caveat that they offer with their results – that “computational approaches to historical texts … must … be tempered by the traditional scholarly practices of ‘close’ reading and intensive analysis of the source material” – is one that should be carefully heeded.
Notes

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5 David Eick, “Defining the Old Regime: Dictionary Wars in Pre-Revolutionary France” (PhD diss., University of Iowa, 2003), 215. The introductory paragraph of my paper is similar to that of the third chapter in Eick’s dissertation; these similarities have been included with Eick’s permission.
9 In addition to the work of Edelstein, Morrissey, and Roe on which this paper focuses, one should also note the important scholarship of Marie-Leca Tsiomis, including “The Use and Abuse of the Digital Humanities in the History of Ideas: How to Study the Encyclopédie,” History of European Ideas 39 (No. 4, 2013): 467–476.
13 Historians have been unable to prove definitively that the 1691 French translation of Locke’s Second Treatise was prepared by David Mazel; nevertheless, there exists a consensus that he was indeed the translator, though his first name is thought to have been “Daniel” by some scholars. See S.J. Savonius, “Locke in French: The Du Gouvernement Civil of 1691 and Its Readers,” The Historical Journal 47 (No. 1, March 2004): 56; Hans W. Blom, “A Dutch Context to Late 17th-Century Republican Thought: Guilielmus Van der Muellen’s Dissertation on Sovereignty,” Il Pensiero Politico 22 (No. 1, 1989), 71; Ross Hutchison, Locke in France: 1688-1734 (Oxford: Voltaire Foundation, 1991), 11; John Christian Laursen, ed. New Essays on the Political Thought of the Huguenots of the Refuge (Leiden: E.J. Brill, 1995), 10; and J.G.A. Pocock, Barbarism and Religion, Volume One: The Enlightenments of Edward Gibbon, 1737-1764 (Cambridge: Cambridge University Press, 1999), 67.
15 Appropriately, previous scholars have already suggested that the political comments of Jaucourt (by far the most prolific Encyclopedist) “are largely derived from Montesquieu, Locke, and others” and that his contributions to the Encyclopédie in general “are filled with acknowledged and unacknowledged excerpts from other sources.” See Frank A. Kafker and Serena L. Kafker, The Encyclopedists as Individuals: A Biographical Dictionary of the Authors of the Encyclopédie (1998; republished, Oxford: Voltaire Foundation, 2006), 177.
17 University of Chicago, “General Chronology,” bit.ly/1qeHjgC.
20 “ARTFL Encyclopédie Project: Publication Dates of the Individual Volumes.”
De Jaucourt

Lumière:

paper “D’un droit de résistance à l’oppression ? Jaucourt et le républicanisme anglais,”

recent publications and presentations

Wolfgang, 1691), 14, and John Locke, prohibited the forcible quartering of soldiers in England.

dragoons, on Huguenots in southern France rather than with [English King James II’s] violating the law which

corroborated by Peter Laslett, ed. 

library at Oxford: Clarendon Press, 1971), 40-41 and Plate 6. The plate offers photographic proof of the existence of Locke’s marks on the manuscript.


Savonius, “Locke in French,” 68. To quote Savonius: “While it cannot be shown that Locke oversaw the production of the Du gouvernement, it can be established that he authenticated the book ex post facto. There are two manuscript additions made by Locke to his copy of the Du gouvernement: it has written on the title-page ‘Pax ac Libertas’ and drawn on the final page his mark of approval.” Savonius consulted Locke’s copy of Du gouvernement in the Bodleian library at Oxford. The observation made by Savonius of Locke’s handwriting on his copy of Mazel’s translation is corroborated by Peter Laslett, ed. Two Treatises of Government (Cambridge: Cambridge University Press, 1967), 13 and John Harrison and Peter Laslett, The Library of John Locke (Oxford: Clarendon Press, 1971), 40-41 and Plate 6. The plate offers photographic proof of the existence of Locke’s marks on the manuscript.


Wilson, Diderot, 202.


Edelstein et al., “Encyclopédie,” 236.
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