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Editing the *Wake*'s Genesis: Digital Genetic Criticism*

Dirk Van Hulle

Building on Daniel Ferrer's definition of genetic criticism as "la science de l'invention écrite,"¹ I would like to investigate the role of genetic editing as the science of written invention. As a research hypothesis, I propose to view written invention in terms of an ecology, and to regard its science as a form of enacting this ecology. One of genetic criticism's great merits is that it has emancipated manuscript research from scholarly editing. Instead of doing manuscript research at the service of establishing an edition (as in textual criticism), genetic criticism sees the manuscript's writing process as a research object in and of itself. But of course, if genetic critics wish to share their work with other scholars and critics, it is necessary to make the *avant-texte* available. This article therefore suggests a reversal of roles, with the genesis of *Finnegans Wake* as a case study: instead of doing manuscript research in view of making an edition, we might conceive of an edition as a tool for doing manuscript research. In other words, scholarly editing is put at the service of genetic criticism and the study of the writing process.

The starting point is the phrase "genesic field" in I.5 of *Finnegans Wake*. It was first introduced in a red-backed notebook, kept at the British Library (MS BL Add 47471b), hereafter referred to as the 'Guiltless' copybook ('Guiltless' because that is the opening word on its first page and "copybook" because it contains drafts rather than notes—such as the jottings in the *Finnegans Wake* notebooks at Buffalo). This copybook contains versions of chapters 2, 3, 4, 5, 7 and 8 of *Finnegans Wake*. Apart from a few exceptions, the rule is that Joyce made two versions of each section² in this copybook (see a reconstruction of the writing sequence at <http://www.geneticjoycestudies.org/guiltless/index.html>).

No matter how useful and necessary it is to start with a clear schematic survey (Fig. 1), it may create the wrong impression that Joyce proceeded systematically, writing two versions of each section before starting the next one. But the writing sequence is more chaotic, as the last section of this article will illustrate. The *James Joyce Archive* has located all the sections and not only reproduced but also distributed them in the corresponding *JJA* volumes on chapters 2, 3, 4, 5, 7 and 8. The result is that in the *JJA* the 'Guiltless' copybook is not represented as such (as a unit in and of itself), but fragmented and dispersed over several volumes. My suggestion is that digital editing may be instrumental in reuniting the dispersed fragments, not just in a technical sense, but as a form of digital genetic criticism: the interpretive act of giving shape to the *avant-texte*.

After a short survey of the history and the state of the art of editorial approaches to *Finnegans Wake*, this article proposes a way of modelling a digital genetic edition

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¹ Daniel Ferrer, *Logique du brouillon: Modèles pour une critique génétique* (Paris: Seuil, 2011), 184.

² Sections are indicated with a §, as in *The James Joyce Archive*.

of “Work in Progress” according to five categories (exo-, endo-, epi-, macro- and microgenesis), thus taking up Ferrer’s suggestion to devise “models for a genetic criticism” in the digital age.³

“Advertisement for the Restoration” vs “Sound-bite against the Restoration”: A Short History

In Joyce studies, 2016 was a year of anniversaries and celebration. Among the many Joycean commemorations, yet another anniversary understandably went unnoticed. Fifty years ago, in 1966, a remarkable collection of essays was published by Faber and Faber. The volume, called *Twelve and a Tilly*, indicates yet another anniversary; its subtitle informs us that it was published “on the occasion of the 25th Anniversary of *Finnegans Wake*”. Two contributions to this collection may serve as a starting point to rethink our approach to editing the *Wake*’s “Progress”: Jack P. Dalton’s “Advertisement for the Restoration” and A. Walton Litz’s “Uses of the *Finnegans Wake* Manuscripts”.

In 1966, Jack P. Dalton made a plea for the restoration of the many errors in *Finnegans Wake*, and in 2010 John O’Hanlon and Danis Rose produced exactly that. After the two Houyhnmhnm Press editions in 2010, Penguin Classics presented the text as “the restored *Finnegans Wake*” in 2012. This was swiftly followed by the 2014 Folio Society edition with illustrations by John Vernon Lord, incorporating 9000 corrections to “facilitate a smooth reading”. In order to do so John O’Hanlon and Danis Rose took on the task Dalton had described in 1966 as one which would entail the “systematic analyses of all known and discoverable extant material, upwards of 20,000 pages, of which the majority are atrociously difficult even to decipher, but it is a task which can and will be accomplished in time.”⁴ According to Dalton, this task was crucial, “for the understanding of this endlessly fascinating book depends upon it”.⁵

It is true that in order to understand, and certainly in order to translate, the text of *Finnegans Wake*, it is helpful and sometimes necessary to study its genesis. The Dutch translators Erik Bindervoet and Robbert-Jan Henkes testify to this point, describing how “[I]n the mid-1990s, we started translating the *Wake* into Dutch, and soon it became apparent that going back to the inception of the work and its gestation, its ‘genetic’ history was vital for even a semblance of understanding and, hence for a translation worthy of the name”.⁶ Since numerous passages got lost along the way, they not only added an appendix with “transmissional departures”, but also “restored” the text in their Dutch version. In the Oxford University Press edition, which was jointly edited with Finn Fordham (2012), the translators again added a list with “unintentional error[s] which, *once restored*, will be beneficial to the structure of the sentence” (*FW* xlvihi; emphasis added). What is of particular note here is that Bindervoet and Henkes spoke of a future restoration a mere two years after the text had been restored by O’Hanlon and Rose. If one compares this scenario with the

³ See the subtitle of Daniel Ferrer’s *Logiques du brouillon: Modèles pour une critique génétique* (2011).

⁴ Jack P. Dalton, “Advertisement for the Restoration,” in *Twelve and a Tilly: Essays on the Occasion of the 25th Anniversary of “Finnegans Wake”*, eds. Jack P. Dalton and Clive Hart (Evanston: Northwestern University Press, 1966), 133.

⁵ Dalton, “Advertisement”, 133.

⁶ Robbert-Jan Henkes, “*Finnegans Wake* in Folio”, *James Joyce Broadsheet* 100 (February 2015), 1

visual arts, it is hard to imagine that, two years after the restoration of, say, the painting *The Tower of Babel*, Bruegel experts would already start talking about a new restoration.

“Restoration” has been a key term in the debate of the past fifty years concerning the text of *Finnegans Wake*. Dalton was not the only Joyce scholar who argued for a restoration. As early as 1955, Theodore Dolmatch published his “Notes and Queries Concerning the Revisions of *Finnegans Wake*”, comparing three pre-book publications of *Anna Livia Plurabelle*. Dolmatch concluded that the majority of the revisions “increase the incomprehensibility of the prose without increasing its quality” and that the “best form” of this text was published ten years before the publication of *Finnegans Wake*: “[Joyce] should have stopped his rewriting somewhere between the versions which appeared in *Le Navire d’Argent* and *transition*”.⁷ One year later, Fred Higginson made a list of twenty-nine emendations, based on a collation of the pre-book publications. Then, in 1960, Clive Hart pointed out that Higginson had failed to check the manuscript versions that followed the pre-book publications, and that six of the omissions listed by Higginson had been deleted by Joyce himself. Twelve years later, Higginson wrote a “*mea culpa*”, but also seized the opportunity to advocate a thorough restoration of the text in the form of “a developmental variorum, to the end of a final text more chronologically eclectic than Scholes’s or Anderson’s editions of the earlier works,” concluding: “A Theobald is required”.⁸

Higginson’s conclusion was a clear position statement with regards to the question of “restoration”. In *Shakespeare Restored* (1726), Lewis Theobald responded to Alexander Pope’s 1725 edition of Shakespeare’s plays by questioning his method. Pope claimed he had edited the texts “with a religious abhorrence of all Innovation, and without any indulgence to [his] private sense or conjecture”, to which Theobald replied that no editor “should be excommunicated for daring to innovate properly.”⁹ Like Dalton and Higginson, A. Walton Litz noted in 1966 that “the published texts of *Finnegans Wake* are corrupt in many places”, concluding: “Of course, any editor must be cautious when he goes beyond Joyce’s own corrections and emends from the manuscripts; Joyce’s ‘love of accidentals’ is well known, and some of the apparent errors may have received his silent sanction. But there is no reason why a good critical text of *Finnegans Wake* should not ultimately be produced, based upon judicious use of the manuscripts”.¹⁰

The notion of “corruption” is part and parcel of the Theobaldian perspective. Although everyone agrees that the text of *Finnegans Wake* as published on 4 May 1939 is the result of a very eventful textual journey, not everyone is willing to speak of textual “corruption”. In the first issue of *Genetic Joyce Studies*, Sam Slote wrote “a

⁷ Theodore Dolmatch, “Notes and Queries Concerning the Revisions of *Finnegans Wake*”, *Modern Language Quarterly* 16 (1955), 147-48.

⁸ Fred Higginson, “The Text of *Finnegans Wake*”, in *New Light on Joyce from the Dublin Symposium*, ed. Fritz Senn (Bloomington and London: Indiana University Press, 1972), 122, 128.

⁹ Quoted in Dirk Van Hulle, “The Wake’s Progress: Toward a Genetic Edition”, *TEXT: An Interdisciplinary Annual of Textual Studies* 13 (2000), 227n22. See also Marcus Walsh, “The Fluid Text and the Orientations of Editing”, in *The Politics of the Electronic Text*, eds. Warren Chernaik, Caroline Davis, and Marily Deegan (Oxford: Office for Humanities Communication, 1993), 32.

¹⁰ Litz, “Uses of the *Finnegans Wake* Manuscripts”, *Twelve and a Tilly*, 100. It seems additionally worthy to note that when the first issue of *A Finnegan Wake Circular* came out in 1985, Vincent Deane formulated the new journal’s objective clearly in the “Editorial” as “the establishment of an accurate text”, 1.

warning against producing a ‘corrected’ *Finnegans Wake* [...] by this I do not mean that no editorial work should be performed upon the text, rather that such work – which will be valuable – should not lead up to a new reading text of *Finnegans Wake*”.¹¹ Drawing attention to a transmissional departure in the fable of the Ondt and the Gracehoper that is clearly the result of a typesetter’s *saut du même au même*, Slote writes:

This is the sort of crux that, once revealed, seemingly screams for correction (or, if not scream, then seductively beckon, with a Gitane languidly dangling beneath come-hither eyes). The published version of the sentence needlessly makes no sense in a particularly cumbersome way, and a simple emendation could return it to a less cumbersome mode of making no sense by restoring a smidgen of syntactic normalcy. The error is needlessly deleterious and could be easily rectified.¹²

His conclusion, however, is not that the mistake should be emended, but that “the error should remain”:

If this error is corrected then, obviously, other comparable errors should be emended as well. The problem then would be to establish criteria by which such errors should be corrected. [...] I doubt that anyone could ever develop a rigid set of criteria to unquestionably determine that a given departure is ruinous to the sense of a passage. One man’s poison is another man’s Irish Stew. [...] For these reasons I advocate rigid conservatism: hands off *Finnegans Wake*. Obviously, these departures need to be recorded – they should be allowed to enter the *Wake*’s paratext (ideally in a hypertextual variorum) – but they should be barred from the text. Let us leave ill enough alone.¹³

Similarly, in the anniversary year 1966, Clive Hart argued that the “corruptions” or “transmissional departures” are an integral part of Joyce’s text, due to a certain “slovenliness” on Joyce’s part: “In practice Joyce was often far from meticulous, nor can all the inaccuracies in his text, as Mr. Dalton is well aware, be attributed to the poor workmanship of typists and printers”.¹⁴ One might argue that if Joyce had been a different person, the text of *Finnegans Wake* might be without so-called corruptions, but as Hart points out, if Joyce had been a different person, there would be no *Finnegans Wake* in the first place. As a consequence, Hart argues that editors are not supposed to be “taking over an author’s responsibilities for him”.¹⁵ The text of *Finnegans Wake*, Hart suggests, is that of the unbound copy of the first edition to which Joyce and Paul Léon introduced corrections. Strictly speaking, this would call

¹¹ Sam Slote, “Sound-bite Against the Restoration”, *Genetic Joyce Studies I* (Spring 2001), accessed 20 November 2016. www.geneticjoycestudies.org.

¹² Ibid.

¹³ Ibid.

¹⁴ Clive Hart, “The Hound and the Type-bed: Further Notes on the Text of *Finnegans Wake*”, *A Wake Newslitter* III.4 (August 1966), 78.

¹⁵ Ibid., 79.

for an even more religious abhorrence of all innovation than Pope's, for instance in the shape of a facsimile edition, either on paper or online, or both.¹⁶

The editorial debate between Theobald and Pope may be ancient, but it is perhaps not the core issue when it comes to editing *Finnegans Wake*/ "Work in Progress". Whether one "restores" the text or edits as little as possible, what matters most is the annotation with which the editor draws attention to revision sites, transmissional departures or other instances of textual complexity. As D. F. McKenzie notes in the Foreword to his Panizzi lectures (1986), "Definitive editions have come to seem an impossible ideal in the face of so much evidence of authorial revision and, therefore, of textual instability".¹⁷ Whatever one's orientation to text may be, the important thing is to apply it consistently.¹⁸

If, for instance, one chooses to restore a text according to the "causal orientation" (focusing attention on the author and on other persons involved in the writing), the annotations will take the shape of a justification for one's emendations. The one thing most reviewers¹⁹ of the Rose/O'Hanlon edition regret is the lack of justification for the thousands of emendations they made to the text, or what Terence Killeen calls "the void at its centre: the absence of the normal apparatus that would accompany any scholarly, critical edition".²⁰ Robbert-Jan Henkes, Erik Bindervoet and Finn Fordham have recently provided a sample of what such a justification of emendations might look like in "Announcing: An Emended *Finnegans Wake* with Full Explanatory Apparatus: A Sample of Pages 3-9".²¹

If one chooses a "material orientation" (because documents are the primary evidence), the annotations serve the purpose of drawing readers' attention to what happened in the writing and production process of the text. In both of these cases (the causal or the material orientation) it is the annotations, not the restorations, that enhance the reader's textual awareness.

Finally, if one chooses a "genetic orientation", the focus is on the composition process. To give shape to the complex, seventeen-year genesis of the 'Work in Progress' *par excellence*, we need to "model" this complexity.

Modelling a Digital Genetic Edition of *Finnegans Wake*

The method of "modelling" is frequently applied in Digital Humanities. It designates the act of consciously and purposefully simplifying a complex problem in order to

¹⁶ A good example of an affordable facsimile edition is the Suhrkamp facsimile edition of Samuel Beckett's annotated copy of *Warten auf Godot* for the 1975 production in Berlin, directed by himself.

¹⁷ D.F. McKenzie, *Bibliography and the Sociology of Texts* (Cambridge: Cambridge University Press, 1999), 2.

¹⁸ See Dirk Van Hulle and Peter Shillingsburg, "Orientations to text, revisited", *Studies in Bibliography* 59 (2015), 27-44.

¹⁹ See for instance Wim Van Mierlo, "'For polemopolity's sake': Editing *Finnegans Wake*. A Consideration and Review", *Genetic Joyce Studies* 12 (Spring 2012), www.geneticjoycestudies.org; Terence Killeen, "Tackling the 'errearsanderroriboose': Another Look at the Rose/O'Hanlon *Finnegans Wake*", *Genetic Joyce Studies* 12 (Spring 2012), www.geneticjoycestudies.org; Robbert-Jan Henkes, "*Finnegans Wake* in Folio", *James Joyce Broadsheet* 100 (February 2015), 1.

²⁰ Terence Killeen, "Tackling", *Genetic Joyce Studies* 12.

²¹ Finn Fordham, Robbert-Jan Henkes and Erik Bindervoet, "Announcing: An Emended *Finnegans Wake* with Full Explanatory Apparatus: A Sample of Pages 3-9", *Dublin James Joyce Journal* 8 (2016), 95-113.

find a computational solution for it.²² To design a digital scholarly edition that may be useful as a tool for genetic criticism, a two-tier model can be applied to the complex genesis of *Finnegans Wake*.

The first tier consists of (a) *endogenesis*, (b) *exogenesis* and (c) *epigenesis*. The terms “endogenesis” and “exogenesis”—coined by Raymonde Debray Genette—denotes the inside and the outside of the genesis, that is, respectively, the drafts of a new work and the external source texts consulted by the author. In case there are pre-book publications that underwent a further process of revision by the author, the post-publication genesis is referred to as “epigenesis”. The second tier consists of (d) *microgenesis* and (e) *macrogenesis*.

(a) *Endogenesis*. As for the uses of the *Finnegans Wake* manuscripts fifty years after Litz’s essay, my suggestion—as mentioned in the introduction—is to turn the traditional relationship around: instead of using genetic research at the service of the production of an edition, the production of an edition can serve as a tool to enable access to and insight into the genesis as a help towards reading *Finnegans Wake*. This entails a digital infrastructure (giving shape to what Sam Slote in 2001 called a “hypertextual variorum”) for the genetic study of “Work in Progress”/*Finnegans Wake*. It would include the James Joyce Digital Library linked to an anchor text (for instance a facsimile edition of the “unbound copy”, both in print and online), and work with a relational database with revision sites, revision narratives²³ and a collation tool such as CollateX²⁴ rather than a traditional critical apparatus. Automated collation is not always possible for the comparison of manuscripts. In the case of authors who thoroughly rewrite their text for a new version, such as Virginia Woolf or Marcel Proust, the multiple versions are often marked by more variance than correspondence, sometimes to such a degree that one would need a tool such as “greedy string tiling” to find *correspondences* (rather than *variants*) in order to be able to determine that they are versions of the same text. Joyce, however, seldom rejected any of his texts; he usually kept adding to them. As a result, textual units are relatively stable (even though they keep growing). Consequentially they can be numbered, compared and checked for *variants* (or ‘*réécritures*’) in a similar way as the synoptic sentence view in the Beckett Digital Manuscript Project (www.beckettarchive.org), with the possibility of collation with CollateX.

The reason why this would be useful was already illustrated in 1966, when A. Walton Litz gave the example of one of the river names to illustrate the use of the manuscripts: “Thus when the word ‘Listen’ is altered to ‘Essonne’ during the rewriting of *Anna Livia Plurabelle* (thereby introducing the Essonne river) the earlier meaning is gathered into the new compound, and examination of the earlier draft helps to confirm the nature of the portmanteau creation”.²⁵

²² See Willard McCarty, “Modeling: A Study in Words and Mean-ings”, in *A Companion to Digital Humanities* (Oxford: Blackwell, 2004), 54–70 and Elena Pierazzo, *Digital Scholarly Editing: Theories, Models and Methods* (Farnham: Ashgate, 2015).

²³ For an example of revision narratives, see the critical edition of Herman Melville’s *Moby Dick* by John Bryant and Haskell Springer (Harlow: Longman, 2007).

²⁴ CollateX is a collation tool developed by the Huygens ING, notably by lead developer Ronald Haentjens Dekker.

²⁵ Litz, “Uses of the *Finnegans Wake* Manuscripts”, *Twelve and a Tilly*, 102.

(b) *Exogenesis*. Many of the *Wake*'s portmanteau words were originally "snatched" or "cogged" from external source texts. The reconstruction of Joyce's virtual library as a relational database is conceived in such a way that it enables readers to follow the genetic path of a word in both directions, from *Finnegans Wake* to the source text and vice versa, with all the intermediate stages.²⁶ The interaction with other authors' works is an integral part of the ecology of written invention. The books Joyce read were his immediate environment, and he usually read them in view of writing his own work.

An example of this action-oriented reading is *Les éléments de l'écriture des canailles* ["The Features of the Handwriting of Scoundrels"], a book on graphology by J. Crépieux-Jamin.²⁷ Joyce took notes on this book in notebook VI.B.6. On page 50, he jotted down an interesting note on revisions or "touched up writing" ("scrape out / scratch – / strike – retouch"), corresponding to pages 292-3 in Crépieux-Jamin's book, but eventually he did not use them to describe Shem the Penman. Though these notes remain dead ends, they are nonetheless interesting to help us understand the dynamics of "Work in Progress". Further, some of Joyce's notes on this book did make it into *Finnegans Wake*. For instance, there are two relatively straightforward paths leading from Crépieux-Jamin's book to *FW* 173. The notes derive from two pages in the source text: page 288 and page 308. But the note from page 288 (VI.B.6.041(h): "**lives on loans / & is 35**") ends up later in the notebook than the note taken from page 308 (VI.B.6.049 (m): "haste"), which indicates an interesting reading pattern: Joyce first appears to have jumped to the last chapter of Crépieux-Jamin's book (Chapter 14: "L'Aveuglement"—possibly because the "blindness" in the title fascinated him).²⁸ Only then did he read the previous pages, notably this note relating to the facsimile of a handwritten text (Fig. 166) on page 288, and where I've placed emphasis in bold:

The author of Fig. 166 alters truth through weakness, vanity, laziness. He has the twisted writing of the imbecile, the small filigree strokes of the depressed, the uncrossed *t*'s of the negligent, the coiled *d*'s of people who are pleased with themselves, and the well closed and rounded *o*'s of those who are unfathomable [...] He belongs to the canaille. [...] He **lives on loans**, lies, **and he is thirty-five**.²⁹

After several distortions in various successive draft stages, the latter phrase became "**lives on loans and is furtive** free yours of age" (*FW* 173.07). In a digital edition, it should be possible to enable readers to retrace the exogenesis and the endogenesis of this phrase, both in clockwise (from the source text to *Finnegans Wake*) and in counterclockwise direction (from the *Wake* to the source text).

(c) *Epigenesis*. If a facsimile edition of the unbound copy at Buffalo were to be published, this would enable readers to interpret the "toposensitivity"³⁰ of the signs on the page. An example is the line: "three tommix, soldiers free, of the Coldstream.

²⁶ Dirk Van Hulle, "A James Joyce Digital Library", in *EJS* 25 (Amsterdam: Brill, 2016), 226–246

²⁷ Source text discovered by Inge Landuyt.

²⁸ J. Crépieux-Jamin, *Les éléments de l'écriture des canailles* (Paris: Flammarion, s.d.), 308.

²⁹ *Ibid.*, 288.

³⁰ Daniel Ferrer, "The open space of the draft page: James Joyce and Modern Manuscripts", *Item*, 19 Jan. 2007, accessed Nov. 20, 2016. www.item.ens.fr/index.php?id=23616.

Guards were walking ...” (FW 058.24-25). Terence Killeen discusses this revision site in his review of the restored edition by O’Hanlon and Rose,³¹ who remove the full stop between “Coldstream” and “Guards” (FW 047.14-15). In all the drafts and typescripts, Joyce wrote “Coldstream guards”. But in the final *Finnegans Wake* page proofs (held in the McFarlin Library at the University of Tulsa), Paul Léon indicated in the right margin that “guards” should be printed with a capital “G”: the “g” of “guards” is underlined twice and crossed out with a forward slash (/), which also serves as an insertion sign corresponding with the same insertion sign in the right margin: /, G.³² As Killeen notes, Léon’s marking is ambiguous: “a printer could be forgiven for thinking that Léon was also indicating a full stop after ‘Coldstream’. It is possible, though this is speculative, that Léon assumed that because Joyce requested the capitalisation of ‘Guards’ it followed that a full stop would precede it”.³³ But it is also possible that Léon simply did what Joyce asked him to do, to insert a full stop after Coldstream, followed by the capital-G Guards, which would correspond to a pattern in the “unbound copy”. As Luca Crispi has noted, the insertion of full stops in mid-sentence constitutes a pattern in the “unbound copy”.³⁴ A facsimile edition of this copy would enable the reader to follow the “epigenesis”, the continuation of the genesis after publication. It would contain the text not only of the *Wake*, but of the “Wake in Progress”.

In the particular case of the Coldstream Guards, the source text was discovered by Vincent Deane as being an interview about a possible reprieve for Bywaters, published in the *Daily Sketch*.³⁵ Joyce processed and developed this material in his manuscripts, starting with the drafts in the ‘Guiltless’ Copybook. Since the development of this fragment continued even after publication (in the “unbound copy”), the digital infrastructure would thus enable readers to explore its exogenesis, endogenesis and epigenesis.

(d) *Macrogenesis*. Ideally, the comparison of versions should be enabled for different sizes of textual units: word versions (XS); sentence versions (S); section versions (M); chapter versions (L); book versions (XL). The majority of words in *Finnegans Wake* are linguistic distortions or “portmanteaux” and Joyce usually needed several versions to arrive at the published version. The first “word version” is often a jotting in one of Joyce’s *Finnegans Wake* notebooks at Buffalo (the so-called “B”-notebooks in Spielberg’s classification). When he used a note in his drafts, he usually crossed it out with a colour crayon. In the 1930s, he asked France Raphael to copy the uncanceled items in the so-called “C”-notebooks. Thus, for instance, notebook VI.C.01 contains the recycled notes from notebooks VI.B.16, VI.B.11 and VI.B.34. From the “C”-notebooks, Joyce either directly incorporated words in his drafts or used them for yet another intermediary stage, the so-called “notesheets”. An example is the note “vice supreme regent” in notebook VI.B.11.131. Joyce did not immediately use it in his drafts, so France Raphael copied it in “C”-notebook VI.C.01,

³¹ Joyce, James. *Finnegans Wake*, eds. Danis Rose and John O’Hanlon (London: The Folio Society, 2012).

³² See illustration in Killeen, “Tackling the ‘errears and erroriboose’”, *Genetic Joyce Studies*.

³³ Ibid.

³⁴ Dirk Van Hulle, “The Lost Word: Book IV”, in *How Joyce Wrote Finnegans Wake: A Chapter-by-Chapter Genetic Guide*, eds. Luca Crispi and Sam Slote (Madison: University of Wisconsin Press, 2007), 436–461.

³⁵ Vincent Deane, Daniel Ferrer and Geert Lernout, ed. *The Finnegans Wake Notebooks at Buffalo*.

or at least tried to decipher Joyce's handwriting. What she made of it was: "with supreme regard". Joyce then selected the note in his notesheets for Book III, chapter 2, where it reads "with supreme regards", and that is also how it ended up in *Finnegans Wake* (FW 461.31).

In addition to the *word version* and the *sentence version* as the "extra small"—and "small"—sized textual units for automatic collation, it seems necessary to also enable comparison of larger units such as *sections* (the textual unit indicated by means of a § sign in the *James Joyce Archive*).

So, the macrogenesis (the genesis across all the textual versions) can be conceived of as a relational database divided into four basic categories:

1. sources (including the extant and virtual libraries)
2. notes (including the Buffalo notebooks and the notesheets)
3. drafts (including manuscripts, typescripts, proofs)
4. editions (including the 'unbound' copy at Buffalo)

For each portmanteau word, it is possible to follow a genetic path through these four categories of documents.

(e) *Microgenesis*. The *JJA* arranges manuscripts teleologically (according to the order of sections in the published version of *Finnegans Wake*). This teleological arrangement is what Pierre-Marc de Biasi calls the "*rangement*", the first phase of the organisation of the genetic dossier.³⁶ The second phase is the so-called "*classement*", the chronological or genetic classification of the manuscripts.

A good example to illustrate the difference between the "*rangement*" and the "*classement*" is the 'Guiltless' copybook, containing versions of chapters 2, 3, 4, 5, 7 and 8 of *Finnegans Wake* (see introduction). In the *JJA*'s "*rangement*", the facsimile of the 'Guiltless' copybook is "cut" into sections and divided over several volumes of the *JJA*. For a "*classement*" however, one must reassemble the sections, for the copybook works as a creative space in its own right. It contains, among many other sections, the so-called "Revered" Letter—the letter ALP writes to defend her husband HCE against various allegations and rumours. Joyce wrote the first draft of this letter in December 1923, when he had filled about twenty-nine pages in the 'Guiltless' copybook. It is preceded by the section in which HCE is hunted as a fox. After this section (I.4§2.*0), Joyce apparently left open two blank pages and then wrote the closing formula of a letter, signed by ALP (at that point still called "Lara Prudence Earwicker"), followed by a short postscript. Since this ten-line passage contains elements that ended up in three different sections, the "*rangement*" of the *JJA* had to reproduce it three times, in different volumes, once under chapter I.4 (*JJA* 46: 56) and twice under I.5 (*JJA* 46: 233 and 294). Joyce then wrote the first draft of the "Revered" Letter on pages BL 47471b-31, 32 and 33, after which he redrafted both the Foxhunt episode (on pages 34-36) and the Letter (on pages 36-42). So the Foxhunt (I.4§2) and the Letter (I.5§2) were apparently closely connected at that moment. This second draft of the Letter was followed by:

- the Delivery of the Letter (pages 35v and 34v, i.e. verso pages in retrograde direction);

³⁶ The "*rangement*" implies each folio's teleological identification of the fragments of definitive text to which it is related. Pierre-Marc de Biasi, "Vers une science de la littérature: L'analyse des manuscrits et la genèse de l'œuvre", in *Symposium, Encyclopaedia Universalis* (Paris: Encyclopaedia Universalis, 1993), 930.

- a first draft of the philological discussion of the Letter (verso pages 33v to 25v, in retrograde direction; section I.5§1);
- a second draft of this section (pages 43 to 49);
- a first draft of the section on the Book of Kells (pages 41v to 43v; section I.5§4);
- and finally the third draft of the Letter (page 14v to 23v).

A fascinating aspect of the drafts of these sections is the way Joyce wrote them wherever he found some blank space, in margins and on verso pages, often writing in retrograde direction. Apparently, he wanted to keep working in the creative space of the multiple drafts he had just written, or the “Text Produced So Far”. This phenomenon is so common that it is usually abbreviated in writing studies as TPSF.³⁷ The famous fear of the blank page is a good illustration. As soon as one has written a few words, the writing seems to be easier. Writing generates further writing. The TPSF triggers associations and thus impacts on the cognitive process. Joyce clearly took advantage of this phenomenon. Because the sections became intermingled in such a complex way, Joyce started numbering and later renumbering the pages. According to the first numbering, the Foxhunt section is followed by the Letter (third draft). We can discern the following phases:

Phase 1:

- 1-3**³⁸ = pp. 34-36
(Foxhunt, section 1.4§2.*1, second draft)
- 3-12** = pp. 36, 37, 14v, 15v, 16v, 18v, 19v, 20v, 22v, 23v
(Letter, section 1.5§2.*2, third draft)

Subsequently, Joyce separated the Foxhunt section from the letter, by means of a second numbering, indicating that the Foxhunt section and the Letter had to be separated by the Philological Discussion (I.5§1) and the section on the Book of Kells (I.5§4):

Phase 2:

- 1-3** = pp. 34-36
(Foxhunt, section I.4§2.*1, second draft);
- 4-10** = pp. 43, 44, 45, 46, 47, 48, 49
(Philological Discussion, section 1.5§1.*1, second draft);
- 11-13** = pp. 41v, 42v, 43v
(Book of Kells, section 1.5§4.*0, first draft);
- [1]4-22** = pp. 36, 37, 14v, 15v, 16v, 18v, 19v, 20v, 22v, 23v
(Letter, section 1.5§2.*2, third draft)

³⁷ See for instance, “The Text Produced So Far and the Use of Working Memory”, in *Writing and Digital Media*, ed. Luuk van Waes, Mariëlle Leijten and Christine M. Neuwirth (Amsterdam: Elsevier, 2006), 161.

³⁸ The numbers in bold typeface indicate Joyce’s numbering. The corresponding numbers indicate the page of the ‘Guiltless’ copybook.

Eventually, Joyce removed the Letter from chapter 5 (and it was not until 1938 that he reincorporated it in Book IV).³⁹ He added a few isolated paragraphs instead, such as the “genetic field” paragraph discussed in the introduction:

Phase 3:

- 1-3** = pp. 34-36
(Foxhunt, section I.4§2.*1, second draft);
- 4-10** = pp. 43, 44, 45, 46, 47, 48, 49
(Philological Discussion, section 1.5§1.*1, second draft);
- [unnumbered]** = pp. 59v; 61v
(two isolated paragraphs on the “(Hen)”)
- 11-13** = pp. 41v, 42v, 43v
(Book of Kells, section 1.5§4.*0, first draft);

The digital medium offers more adequate tools to visualise this writing sequence in an intuitive and dynamic way, but the following images may give an impression:

Phase 1: ‘Foxhunt’, followed by ‘Letter’

Phase 2: ‘Foxhunt’, followed by ‘Philological Discussion’, ‘Book of Kells’ and ‘Letter’

³⁹ For an animated reconstruction of the writing sequence, see <http://www.geneticjoycestudies.org/guiltless/index.html>

Phase 3: 'Foxhunt', followed by 'Philological Discussion', two isolated paragraphs on 'the Hen', and the 'Book of Kells'

The visualisation of this process may at first sight seem a merely graphical or cosmetic issue, but it is more than that. It is a way of modelling the creative process. Since the genesis of *Finnegans Wake* is one of the most complex composition

histories in twentieth-century fiction, it is an excellent testing ground to develop a model for mapping “genetic fields” in literature.

What happens on these pages in the “Guiltless” copybook is a complex movement both in the creative process and—from a narratological standpoint—in the process of characterisation. Joyce introduces ALP by means of her letter in defence of her husband, HCE. It is a *stylistic* introduction: ALP’s writing style is the first tool Joyce employs to define her as a character. By gradually removing the letter and eventually introducing a hen that finds the letter, Joyce makes a shift from directness to indirection, from ALP’s viewpoint to the hen’s, i.e. “what the hen saw”.

The introduction of the character by means of her writing style also has an important cognitive dimension. It means that Joyce introduced this character by means of a cognitive process that is characterised by what recent cognitive philosophy would term either “enactivism” or the “extended mind” theory. What these two paradigms have in common is the hypothesis that the workings of the mind are not confined to the inside of the skull, but that there is a constant interaction between an intelligent agent and his or her cultural and material environment. In this particular case, ALP thinks on paper, that is, her mind works in interaction not just with a piece of paper, but also with the TPSF (the Text Produced So Far).

The published text of *Finnegans Wake* suggests that the letter was dictated by ALP and that Shem the Penman was the actual writer. But at the time Joyce wrote the first few drafts of the letter in the “Guiltless” copybook, that idea (of Shem being the one who wrote it down) had not yet been introduced. Only after Joyce had written the first draft did he add this note in the top margin of the first draft’s opening page: ‘Alone she cannot have indited it for the hand was fair. We can suppose it that of Shemus the penman’ (MS BL 47471b, 31r). So, Joyce first used the cognitive process he knew best (thinking on paper) to introduce the – then – new character of ALP by letting her write a letter (full of spelling mistakes, grammatical errors and nonsequiturs), characterising her as a loving wife with a rather chaotic mind. Gradually, Joyce elaborated on the letter until he removed it from its original context (chapter 5), thus creating another mystery (such as the mystery of HCE’s so-called crime in the park) around which the rest of the book can keep speculating.

By the time Joyce reintroduced the letter in Book IV, this version was no longer just another version of the early drafts in the ‘Guiltless’ Copybook. Whereas the drafts in the ‘Guiltless’ Copybook were the fictional representations of an autograph manuscript (reflecting both ALP’s thinking-on-pager and Joyce’s extended mind at work, that is, the extended cognition of the real-life author), the version in Book IV had become a copy by a scribe (Shem the Penman). Whereas the early drafts of ALP’s letter enacted the workings of ALP’s mind, the published version is enriched or impoverished by more external agents and elements, or to use Joyce’s own metaphor: “A living style should be like a river which takes the colour and texture of the different regions through which it flows”.⁴⁰ In the case of “Work in Progress”, this is much more than ‘just’ a stylistic matter; it summarizes the very idea behind the elaborate “stream of consciousness” that is *Finnegans Wake*, which every reader enters the moment s/he reads the word ‘riverrun’.

Conclusion: The Ecology of Written Invention

⁴⁰ James Joyce in Arthur Power, *Conversations with James Joyce* (Dublin: The Lilliput Press, 1999), 91.

As this article has illustrated, the process of characterisation in “Work in Progress” depends on the ecology of written invention, in which the physical space of the copybook plays a crucial role. In addition to the chaotic distribution of sections over the copybook’s pages, there are shorter fragments that are simply jotted down wherever Joyce found some blank space. Thus, for instance, the phrase “genesic field” is part of a paragraph that was noted on page 61v,⁴¹ facing the text of chapter 7 rather than that of chapter 5, where it “belongs”. The opposite page (62r), in the first section of chapter 7’s negative description of Shem the Penman, features the question: “Who knows how many unsigned first copies of original masterpieces, how many pseudostylousshamiana, how few of the most venerated *public impostures* how very many palimpsests slipped from that plagiarist pen?” (MS BL 47171b, 62r; emphasis added).⁴² As soon as the text on the recto was written, Joyce started adding sentences. This second writing layer is marked by additions on the facing page (61v), such as this sentence, based on an entry in Buffalo notebook VI. B.02: “*One cannot even begin to imagine how really low such a creature really was*” (MS BL 47471b, 61v; the words in italics derive from VI.B.02:154). Underneath this sentence, belonging to chapter 7, Joyce wrote an isolated paragraph, belonging to chapter 5. Apparently, the Text Produced So Far (TPSF) has had an impact on the newly created passage: it is due to the description of Shem the Penman (chapter 7) that Joyce started describing the hen. This paragraph, marked by means of the heading “(Hen)”, is the paragraph in which the phrase “genesic field” first occurs:

(Hen)

For her socio-scientific sense is sound as a bell, sir: her volucrine automutativeness right on normalcy. She knows, she just feels ^{kind of} born to sit on eggs, & trust her to propagate the species & to pivot her fluffballs^{safe} through din & danger: in her *genesic field*, lastly but mostly, it is all game & no gammon, she is ~~really~~ a good girl really who is ladylike in everything she does & plays a gentleman's game every time. Let us hope. (MS BL 47471b, 61v; emphasis added)

A similarly isolated paragraph can be found on page 59v:

Lead, kindly fowl! She has always ~~done so~~: ask the ages. What bird has done yesterday man may do next year: be it fly, be it moult, be it hatch, be it agreement in the nest. Before all, this has time to end the golden age will return with its vengeance: Man will become dirigible, age will be rejuvenated, the ridiculous burden & woman will move by one step towards sublime incubation & the human lioness with the dishorned manram will be down fleece by flank. (MS BL 47471b, 59v)

Eventually Joyce entwined these two paragraphs (starting with “Lead, kindly fowl!” until “agreement in the nest”; followed by “For her socio-scientific sense”; and ending with “Before all” until “fleece by flank”; see *FW* 112.9-23). Although these

⁴¹ Hereafter, the references to page numbers in the ‘Guiltless’ copybook are followed by either ‘r’ (recto) or ‘v’ (verso).

⁴² The words “public impostures” derive from Buffalo Notebook VI.B.10: “imposture book through / the ages, revered more / & more” (VI.B.10: 09).

two isolated paragraphs are separated more than ten pages from Chapter 5, section 1, they link up with its second version, which ended on page 49r: “the farther back we seem to get the more we need the loan of a lens to see as much as the hen saw” (MS BL 47471b, 49r). And as for the hen’s “genesic field”: More directly than the term “genetic” the word “genesic” alludes to the biblical book of Genesis. As Almuth Grésillon notes in *Éléments de critique génétique*, the book of Genesis has a particularly teleological structure⁴³: according to the Bible, the creation of the world was a straightforward, linear path, leading directly to the satisfaction of God, who “saw that it was good”. The hen’s “genesic field”, however, is *ein weites Feld*, marked by crisscrossing paths of revising and restructuring. That is why “we need the loan of a lens” in the form of a digital genetic edition to see as much as Joyce saw when he was writing his “Work in Progress”.

⁴³ Almuth Grésillon, *Éléments de critique génétique* (Paris: CNRS Editions, 1994), 138.