Butterflies, Busy Weekends, and Chicken Salad:

Genetic Criticism and the Output of @Pentametron

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Abstract: Textual analysis places great emphasis on determining the development and direction of authorial intention to illuminate a text's layers of meaning. How, though, is one to determine the development of authorial intention in a text that appears to remove the traditional human author? This paper explores issues of authorship presented to genetic criticism (*critique génétique*) by algorithmically-produced texts – that is, texts produced through programmed logic in a computer rather than through direct human agency – such as those of the Twitter bot Pentametron (twitter.com/pentametron). This paper considers the perceived importance of authorship and human agency in the creation of a text. Algorithmic texts challenge contemporary notions of textual creation and development, in turn posing challenges to genetic criticism that are similar to those posed by cut-up texts in other media. This paper argues that Pentametron's rather nonsensical algorithmic output stresses the reader's responsibility for meaning-making, and suggests that such algorithmic texts are not so much final texts to be subjected to genetic critique themselves, but are more aptly considered to be forms of *avant-texte*. These avant-textes serve as inspiration for human-computer symbioses, for re-creations wherein readers make sense out of the seemingly senseless.

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"Why even bother trying to explain / so… who's excited for The Getaway? / Now at the station waiting for the train / I saw a butterfly in hell today" (Pentametron [Ranjit Bhatnagar]). This poem is the product of Pentametron, a Twitter bot programmed to pair publicly-available tweets written in iambic pentameter into rhyming couplets. A bot is a software application that autonomously completes repetitive tasks, often faster than a human could; it simply does what it has been

programmed to do, unable to generate output outside of its programmer's constraints. Pentametron's resultant output may be inane, but it may sometimes seem insightful, juxtaposing the disparate thoughts of unassuming individuals and thereby prompting readers to connect the disjointed. Evoking the tradition of cut-up poetry, as well as collage-like modernist works, Pentametron perpetuates a lineage of meaning conveyed through systematised incoherence.

How, though, is one to consider the process of textual creation for a text that appears to remove the traditional human author? Hans Walter Gabler writes that an effective textual analysis "lays open the text in process as moved into multiple directions and dimensions of meaning by force of developing and shifting authorial intention" (115). Through such textual analysis one may reconstruct and analyse an author's process of textual creation, appreciating the nonlinear development incited by complex exogenetic and endogenetic interplay. This article explores issues of authorship presented by algorithmically-authored texts—that is, texts produced through programmed logic in a computer rather than through direct human agency (i.e. natural language generation or procedural generation)—such as those produced by Pentametron. Although Pentametron's algorithmically-composed poetry may at times appear in a seemingly final state, with its creator capitalising on the 'static' form of a poem removed from its initial ephemeral Twitter context, these poems in actuality serve more as drafts for others to adapt and draw inspiration from. For textual scholarship, the misinterpretation of these texts as final hinders holistic analyses. As will be shown, Pentametron's poetry could be subject to such methods of textual analysis as genetic criticism (*critique génétique*) in so far as criticism of an algorithmically-generated exogenetic reassembling may find inspiration in existing genetic critiques applied to the analogue, but such algorithmically-generated output is arguably more equivalent to a modern manuscript than to a final text.

Genetic criticism focuses on the process of a text's production over a text's final state. Methods of genetic criticism generally comprise two stages: the first, exploratory, wherein a text's temporal sequence of composition is construed to understand the stages of writing; and the second, interpretive, wherein the textual scholar provides an exegesis of a text based on that which is found during the former stage, using critical or hermeneutic tools such as psychoanalysis or linguistics (de Biasi, 'Toward a Science'; Van Hulle, *Textual Awareness*, 4-7). Pierre-Marc de Biasi proposes that the genetic approach is, more particularly, "characterized by a certain calling into question of the *authority of the text*, with very close attention paid to the way(s) in which it was elaborated" [emphasis original]. De Biasi further adds that the 'mobile image' revealed by the avant-texte, which proceeds a text's final state, can in turn reveal that text's 'truth' ("Horizons", 124-125). Similarly, for Dirk Van Hulle, analysing a text's exogenetic material (which includes avant-textes) contributes to understandings of the

'extended mind' – that is, the mind of the author and the author's intentions during the creative process (*Modern Manuscripts*, 1-16).

A preoccupation with determining 'authorial intention' can shift attention away from appreciation of textual variants and transmissional discrepancies. 'Authorial intention' implies finality, with no editorial adjustment to a text in its production (Gabler, 109), yet interferences from publishers, editors, typographers, and even readers present myriad opportunities for textual adjustment and adaptation. Genetic criticism ultimately aims to expose a text's underlying truths as they are represented by the authorial process leading to the text's final state. Genetic criticism recognises that an author does not necessarily produce a text lineally – beginning with a predetermined final goal in mind and moving towards it – but rather that authorial intent fluctuates throughout the process of creation (which may be informed by human interventions). No text ever achieves a definitively final state; readers continue to reinterpret and adapt texts in accordance with changing cultural and individual circumstances. Genetic criticism therefore aims to recognise the influences on a text's creation and recreations, acknowledging what changes in authorial intent meant at their respective times rather than focusing solely on the eventual textual output.

Analogue and Digital Authorship

There are some cases in which all that is available is the text in a seemingly final state, and avant-textes showing processes of composition and revision are simply not available. Indeed, digital-born texts can lack comprehensive evidence of process as they are not necessarily viewed as 'works' in the traditional sense (that is, comprising draft manuscripts and other preparatory materials), but can rather be represented by single documents that are inherently malleable. Discussion regarding textual scholarship has focused on theories particular to manuscripts and printed texts, using concepts that do not fully apply to digital phenomena.

Jerome McGann began to bridge the conceptual gap between physical and digital texts in his work on hypertext. McGann claims that 'decentralised texts' are created when electronic hypertext, a prevailing feature of digital texts, is used to navigate through complex bodies of documentary materials ("The Rationale"). Digital texts present new issues to genetic criticism, as they "can be as ephemeral as they are mutable", write William Proctor Williams and Craig S. Abbott. This means that "tracing the forms and histories of electronic texts will in future present considerable challenges" (69). The changes triggered by today's greater cultural shift towards digital text production prompt changes in conceptualisations of authorship. What, for example, is the genetic critic to make of the increasingly common collaborative authorship in the new digital

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environment (Townsend and Heron)? What is the genetic critic to make of an author not strictly speaking human?

In the analogue age, Roland Barthes and Michel Foucault together formed a solid foundation for considering changing notions of authorship. Both asserted that the contemporary notion of 'authorship' reflects a general privileging of individualisation in the overall history of ideas, knowledge, and literature (Barthes, 142-143; Foucault, 205). Authorship, they both note, is largely an ideological construct: the individual who produces a text's meaning is not so much the person who wrote it, but the reader. Barthes writes that "the reader is the very space in which are inscribed, without any being lost, all the citations a writing consists of; the unity of a text is not in its origin, it is in its destination" (4). Foucault elaborates on this idea when he suggests that "in writing, the point is not to manifest or exalt the act of writing, nor is it to pin a subject within language; it is, rather, a question of creating a space into which the writing subject constantly disappears" (206). In some instances, the human author is almost entirely removed. Published in 1984, for example, the text of *The Policeman's Beard Is Half Constructed* was supposedly produced entirely by Racter, a computer program designed to randomly generate English poetry and prose. The only acknowledged human intervention in the book is the introduction and graphic design (Racter [Chamberlain and Etter]). Certainly, notions of the disappearing author do not go uncontested: Matthew Kirschenbaum, for one, considers the traditional 'author' role as not disappearing, but rather shifting towards an '@uthor' role, in which authors are increasingly using digital social media to engage with their readers directly ("What is an @uthor?"). Even Kirschenbaum's view, though, adheres to Barthes and Foucault's underlying argument for a general shift from the individual author to the collective readership in discerning meaning from texts, as today's digital environment is arguably making the author a less definitive figure. The traditional author function thereby appears to be fading in response to large-scale societal changes. Algorithmic authorship, such as that of Pentametron, in particular embodies this shift.

Introducing Pentametron

Pentametron is a Twitter bot that creates poetry by assembling public English-language tweets that are written in iambic pentameter into rhyming couplets, and then retweeting the created work to the Twitterverse. A Twitter post (also called a tweet) is a message of up to 280 characters, typed and uploaded to Twitter by a registered Twitter user. Once uploaded, the post appears on the user's Twitter stream, alongside all other tweets uploaded by the user. The user is cited as the original source of the tweet. Below is a screenshot of Kim

Kardashian's Twitter stream featuring two of her personal Twitter posts (5 April 2015).

Fig. 1: A screenshot of Kim Kardashian West's Twitter stream

A Twitter retweet occurs when a Twitter user posts another user's tweet to his/her own Twitter stream, while maintaining the authority of the original tweet. A user clicks the arrowed-rectangle button included under the relevant tweet to retweet it. The above image shows that, at the time of writing, 811 Twitter users had retweeted Kim Kardashian's upper tweet, and approximately 1,800 Twitter users had retweeted her lower tweet.

Pentametron does not post original tweets; the entirety of its Twitter stream is retweeted. The bot analyses approximately ten percent of all tweets in the world, and references Carnegie Mellon University's Pronouncing Dictionary to select and pair individual tweets that adhere to iambic stress rhythms and to ensure that paired tweets rhyme ("Dorkbot NYC"). Pentametron's program was created in 2012, and is still maintained, by experimental artist Ranjit Bhatnagar. A screenshot of Pentametron's Twitter stream is included below, to illustrate Pentametron's primary format for presentation (accessed 19 March 2015, 21:58).
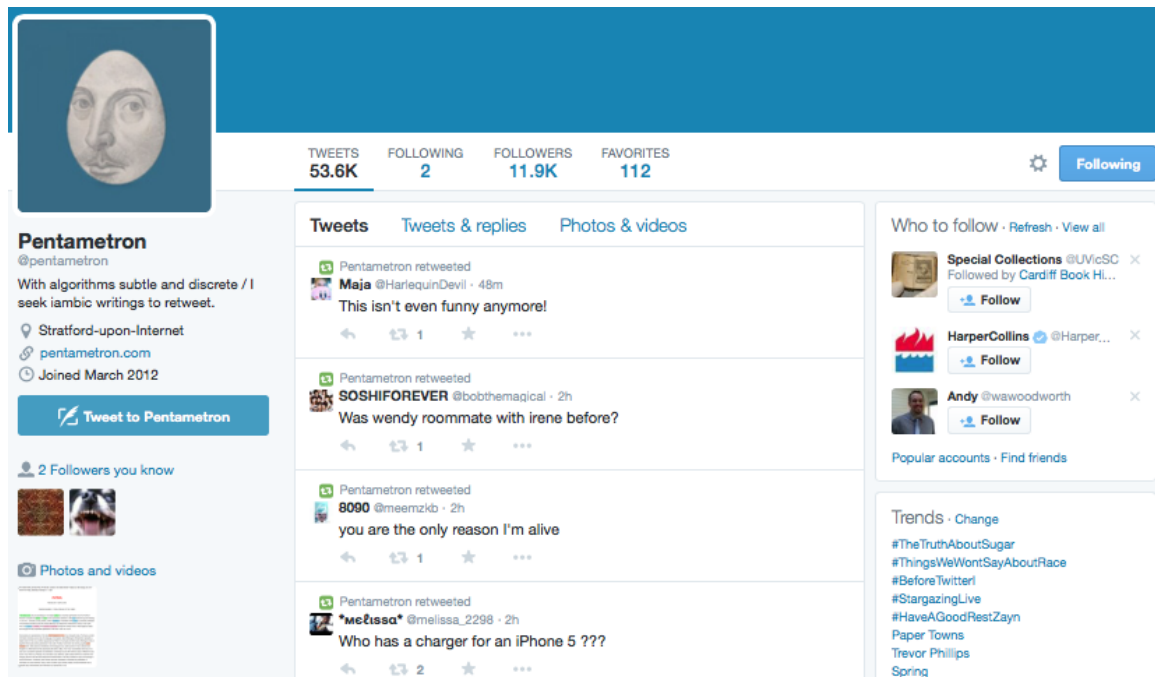
Fig. 2: A screenshot of Pentametron's Twitter stream.

On the surface, there may not appear to be much of a process to Pentametron's poetry creation: the poems the program produces appear solely in their aggregated, and seemingly final form. There is, however, an underlying creative process in Pentametron's functionality, albeit one deeply embedded in the program. Bhatnagar has made some creative changes to Pentametron's program since its inception: he adjusted it to produce rhymed couplets rather than just find and retweet posts in iambic pentameter; he relaxed the rule that dictated that tweets always had to be used in chronological order; and he occasionally adjusts logic filters to prevent spam and cliché tweets, such as particular lyrics from popular songs, from being eligible for selection. Pentametron's Twitter output, however, has never had any explicit human curation (Fitzgerald). Human involvement in Pentametron is only explicitly apparent when one sees the contributing tweets as they are retweeted from their source Twitter streams. The program's implicit "author" – Ranjit Bhatnagar – remains hidden behind his strings of code.

This said, Bhatnagar has ventured into the realm of more traditional authorship by digitally crafting sonnets on specific topics. Bhatnagar selects rhyming couplets from Pentametron's history, and then compiles them to make his own poetry. The resultant poems are published on a Tumblr blog (Bhatnagar, *Tumblr*). Some of the poems have been compiled into a collection entitled *I got a alligator for a pet!*. The following poem is one example from *I got a alligator*:

"I really wanna dance the night away!"

Why even bother trying to explain
so... who's excited for The Getaway?
Now at the station waiting for the train
I saw a butterfly in hell today

Forever underneath The Dreaming Tree.
Still crying at the cemetery scene:(
So many random numbers calling me._.
Can someone please create a time machine

some lady was creating on her son ,
I really want a chicken salad tho !
This weekend is a very busy one! :)
good music never makes the radio .

I always pictured it another way :o
Good morning all and have a lovely day

(Pentametron [Ranjit Bhatnagar]).

Recall that a genetic critique comprises two stages: exploratory, which aims to construe a text's temporal sequence of composition, and interpretive, which aims to critically explain and interpret the text according to the information revealed in the former stage. At first glance, an exploratory analysis of Pentametron's output would appear to be rather straightforward, as Pentametron is programmed to retweet posts rather than to copy text and post from its own account. Whether Bhatnagar keeps track of source tweets in his own Pentametron-inspired poetry depends on the particular project; in generating the poem above, as with the other poems he has posted on Tumblr, he discarded all attributions at the final stage of production (Bhatnagar, "Questions"). To conduct an exploratory analysis of this work, then, one must actively search for the source tweets to trace original authors. Using some of the available resources – Twitter's 'Search' function, the Google search engine, Archive.org's Wayback Machine, and TweetTunnel.com (which facilitates searches of a user's past 3,200 tweets) – I myself attempted to find each line's source Twitter stream. The Library of Congress' Twitter archive – in which everything that has ever been submitted to the Twitterverse was to be included although this purpose has recently been limited – is not yet available for public consultation, although it may one day prove a useful tool (Osterberg).

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Line	Source
I really wanna dance the night away!	Untraceable: Commonly-tweeted lyrics from Maroon 5's song 'Love Somebody'
Why even bother trying to explain	Untraceable
so... who's excited for The Getaway?	@PartyHardSel, 1 August 2013
Now at the station waiting for the train	Untraceable
I saw a butterfly in hell today	Untraceable: Commonly-tweeted lyrics from Lil' Wayne's song 'God Bless Amerika'
Forever underneath The Dreaming Tree.	@Bry_Bro, 29 April 2013
Still crying at the cemetery scene:(	@geelovesjoey_x, 10 March 2013
So many random numbers calling me._.	Untraceable
Can someone please create a time machine	Untraceable
some lady was creating on her son ,	Untraceable
I really want a chicken salad tho !	@aizhaxo, 27 February 2013
This weekend is a very busy one! :)	Untraceable
good music never makes the radio .	@noblesoulsam, 27 February 2013
I always pictured it another way :o	Untraceable
Good morning all and have a lovely day.	@samgbenga08, 6 May 2013

Table 1: A table noting all of the traceable sources of each line of text from a Pentametron/Bhatnagar poem.

Determining the genetic dossier of Pentametron's retweets proved surprisingly difficult. Twitter's scroll function prevents one from scrolling through an account's tweets for more than a few months back. Furthermore, Pentametron generally posts a new couplet every few hours, meaning that it retweets literally dozens of posts to its Twitter stream each day; simply scrolling through Pentametron's stream is too time-consuming and ultimately ineffective for such purposes. Using Twitter's 'Search' function to search line-by-line is effective only if the line being searched is unique or at least particularly rare, as the function searches through all public tweets. However, the 'Search' function is useful in that it shows who has retweeted each tweet (although not *when* they retweeted). Hence, to verify that a tweet is the precise one appropriated by Pentametron, one need only check that the tweet in question has been retweeted by the Pentametron account. The Wayback Machine and TweetTunnel archive older tweets than those that can be viewed on individual Twitter streams, although many tweets are still not available due to the sites' limited functionalities and server capacities. Issues may also stem from source tweets' users changing their Twitter handles or deleting their accounts, hence impacting the effectiveness of any internal or external Twitter archive search, as well as hindering the researcher's ability to reference each tweet according to its appropriate Twitter handle at the time of its initial publication. Indeed, traces of the original author or the original tweet may be impossible to recover.

Where a phrase comes from is generally regarded as an important genetic fact that can contribute to an understanding of the authority of a text and the

ways in which it was elaborated. However, an exploratory genetic analysis of Pentametron is not as straightforward as one may expect, as its poems can be considered to have been composed in some sort of collaborative way, albeit often without much regard for maintaining authorship citations. Traditional notions of authorship, and genetic integrity more generally, face obsolescence in Pentametron's program, and analogue-centric methods of textual analysis such as genetic criticism could potentially be regarded as irrelevant to such digital circumstances.

An interpretive analysis of Pentametron's output is similarly complicated. In a teleological sense, the genetic critic must interpret avant-textes while pretending that the final text does not exist, based on the premise that an author can never be sure of what the final text will be when writing it. However, this approach presents a methodological problem for Pentametron's output in particular. As shown above, the avant-textes of Pentametron's output are difficult to determine. How, then, could one interpret Pentametron's output, which shows limited regard for traditional authorship attribution?

Literary comparisons may serve as useful foundations for making sense of this problem. Twitter could be considered a new literary medium with its own specific characteristics, and each Twitter stream an ever-developing string of text. One may draw parallels between literary sources such as Joyce, for example, to determine Pentametron's literary or cultural merit. Like James Joyce's *Finnegans Wake*, Twitter presents a universal history into which virtually anything can be absorbed. Dirk Van Hulle provides insight into Joyce's process, noting that Joyce was not so interested in his initial authorial intentions, but rather in the sociological and historical contingencies that characterised his work's textual development (*Textual Awareness*, 110). Features of *Finnegans* – Joyce's dream language wherein rational thought appears suspended (Moffat), the transmissional modifications that delve the text further into gibberish, the inclusion of mundane phrases pulled from Joyce's personal experiences as well as the texts he read – similarly appear in Twitter streams. Just as readers take meaning from *Finnegans* despite – or because of – its complexity, readers may see the disjointedness of modern life reflected in the juxtapositions of Pentametron's seemingly disparate retweets that, through their iambic rhythms, come together to create couplets that seem so complementary.

Cut-Up Poetry as a Guide for Genetic Critique of Pentametron

Comparing Pentametron's output to literary prose, however, does not adequately account for the randomness and disjointedness of Pentametron's couplets. Ranjit Bhatnagar himself likens Pentametron to "a work of cutup poetry rather than an anthology" (Bhatnagar, "Questions"). One may, then, find a

more solid foundation for interpretation of the genesis of Pentametron's output in existing theories of cut-up poetry.

Cut-up poetry is said to have been (re-)discovered by Brion Gysin in 1959, when he cut passages out from newspaper articles and rearranged them randomly to create his poem *Minutes to Go* (Gysin, Burroughs, Corso, and Beiles). The method was then popularised by William Burroughs. Burroughs writes: "All writing is in fact cut-ups. A collage of words read heard overhead. What else? Use of scissors renders the process explicit and subject to extension and variation" (91). To be sure, the cut-up method itself stems from earlier modernist efforts to produce collage-like poetry; such efforts include Ezra Pound's *Cantos* and T. S. Eliot's "The Waste Land", both published in the 1920s. Juxtaposing passages drawn from various external sources, these textual collages portray the complexity of cultural circumstances, while at the same time demonstrating how disparate understandings of self and society synergise into the everyday.

Pentametron is one of many algorithmic descendants of these cut-up and collage methods. For example, poet Charles O. Hartman has written computer programs, had the programs rearrange texts according to his specifications, and then used the rearranged texts to craft his own texts (Hartman). Similarly, Sam Riviere has produced a book of poetry, *Kim Kardashian's Marriage*, composed entirely of text found in online searches and then crafted into stanzas by Riviere himself (Riviere). Like the cut-up poet, Pentametron weaves disparate fragments of text together into something novel. However, the program generally lacks the subjectivity afforded by human lived experience. Instead, it adheres to strict rules to produce poetry by objective standards, due to its wholly mechanised approach to an art form often considered an apotheosis of human expression. Hartman's and Riviere's poetry maintains this subjectivity through its explicit human intervention and interpretation; Pentametron's does not, with the exception being when Bhatnagar himself crafts poetry from Pentametron's output as he did for *I got a alligator*. Pentametron's poetry is almost entirely unoriginal in that Bhatnagar never adds a single word of his own, and he rarely interferes with his program's functionality. Nevertheless, Pentametron, and all other algorithmic descendants of the traditional cut-up method, demonstrates a sort of human-computer symbiosis in that even the most objectively-created poetry is still dependent upon human-developed and -mediated computer code.

Drawing Inspiration from Pentameton's Output

Although the program is constructed and operates according to strictly-defined programmed logic, much of Pentametron's output is nonsensical: the two tweets comprising a couplet often do not make semantic sense when paired. Even when Bhatnagar himself creates poetry from the resultant couplets, the reader is left in a muddle of butterflies, busy weekends, and chicken salad. Kenneth Goldsmith

provides what is perhaps the best explanation of reactions to textual absurdity such as that produced by Pentametron:

> Narrative reflexes that have enabled us from the beginning of time to connect dots, fill in blanks, are now turned against us. We cannot stop noticing: no sequence too absurd, trivial, meaningless, insulting, we helplessly register, provide sense, squeeze meaning, and read intention out of the most atomized of words. Modernism showed us that we cannot stop making sense out of the utterly senseless. The only legitimate discourse is loss; we used to renew what was depleted, now we try to resurrect what is gone (221).

Yet, for Pentametron one cannot necessarily "resurrect what is gone" through consideration of explicit authorial intent, but instead must do so through interpretation of the context of each individual tweet, couplet, or poem. Pentametron's couplets do not so much serve as records of any creative process, but rather as instigators of creative processes. After all, "all text may be viewed as part of an on-going process and [...] the act of publication does not necessarily mark the endpoint of process – which many texts may never archive or want to achieve in any case" (Bushell, 101).

In addition to Bhatnagar's creation of Pentametron-based poetry for his Tumblr account, other people have attempted to use Pentametron's output for their own artistic purposes. A band called Fail Lie, for example, has recorded seven songs whose lyrics are composed solely of Pentametron's rhyming couplets, which have been arranged by the band to create somewhat coherent narratives (Fail Lie). As another example, online fan fiction writer Ember Nickel has written a story called "Love Doesn't Have Restrictions", which is a love story between Pentametron and StupidCounter, another algorithm-based Twitter stream (Ember Nickel). Pentametron's output has thus encouraged further human-computer symbioses for creative purposes. These symbioses could be analysed through the lens of adaptation studies in addition to genetic criticism. While I avoid such a digression here, there is potential for future study that applies other conceptual lenses to analyses of Pentametron and algorithmically-authored texts more generally.

Pentametron itself could be considered a modernist experiment, incomprehensible, an unreadable joke. Perhaps it is all of these things, although due to its influence on further artistic projects it has certainly become more. Pentametron is a basis for a revise-and-expand technique, as its output is augmented and adapted into new texts with potentially new contexts and meanings. Although Pentametron's output may appear an achievement of textual stability, the output is in fact always subject to transmissional modification; as Gabler writes, "authorial intention is not a metaphysical notion to be fulfilled but a textual force to be studied" (112). Pentametron produces texts that are in

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contingent states of completion, constantly moving in ways that transform the program's initially nonsensical output into something meaningful that can carry the text forward (Hay, 17-27). Pentrametron is a computer-generated manuscript, whose cultural significance stems from the creative projects it inspires.

"What is immediately most striking about our knowledge of English is its open-endedness," writes linguist Neil Smith. "Despite the fact that at any one moment our vocabulary is finite, we can go on creating and understanding utterances we have never heard before" (4). As demonstrated by the creative by-products of Pentametron's output, such utterances – even those produced through algorithmic means – can have profound impact on the human creative process that warrants genetic criticism. Pentametron is a sort of *détournement* for the twenty-first century, wherein public tweets are reused for alternative purposes, in some ways producing a kind of satirical parody of the mundaneness of everyday life and randomness of thoughts posted online. In isolation, each tweet means little; paired with another tweet, meaning is more easily discerned.

Thus, while de Biasi argues that the mobile image revealed by the avant-texte can in turn reveal a text's truth, algorithmic authorship finds further theoretical support in D.F. McKenzie's overarching notion of the sociology of texts. McKenzie writes that "the claim then is no longer for [texts'] truth as one might seek to define that by an authorial intention, but for their testimony as defined by their historical use" (29). Pentametron exemplifies a form of performative, more than authorial, writing "in which", in accordance with Barthes' argument regarding authorship, "utterance has no other content than the act by which it is uttered" (3). The program's output is wholly dependent upon the medium through which it is produced: Twitter, where one may publicise only a short burst of thought at a time. Its utterances – its poetry – speaks more to "the act by which it is uttered" than to semantic or linguistic significance. Interpretive analysis that considers reader response is more apt to make sense of Pentametron's output than an exploratory analysis of authorship, as the algorithmic author serves as one extreme example of Barthes and Foucault's disappearance of the traditional author. The author is no longer a writer of prose or poetry: he is a programmer, hidden behind the output of his code.

There is an impulse to apply 'analogue' textual analysis techniques to Pentametron's output given its seemingly static form, and these techniques can indeed contribute to derivation of meaning from this output. The application of genetic criticism, as has been shown, is useful for an examination of how a Pentametron couplet does not emerge from a single fixed point, but from a plethora of potential building blocks existing in the digital ether. As with any human writer, Pentametron's code interacts with the world as a source of information, and remixes that which has already been tweeted to create new and unique texts by means of an algorithmic cut-up method. This said, Pentametron's

program is rigid, using fixed functions to complete a particular task. The program cannot creatively interpret that which it retweets. Indeed, not until a human interprets Pentametron's output can it be assigned cultural significance and be subject to genetic critique. To attempt a genetic critique of Pentametron's output in isolation using traditional methods of understanding – by solely applying the exploratory and interpretive stages to construct a mobile image that reveals a text's truth – is to attempt driving forward while looking in the rear-view mirror. Traditional methods of genetic critique must be applied to algorithmically-authored text with caution, for it is not the algorithmically-authored text that should be dissected, but the subsequent appropriations which it has gone on to inspire.

Genetic criticism does need not to be overhauled to accommodate algorithmically-authored texts. Emphasis simply must be on the interpretive, rather than the exploratory, step to account for new digital circumstances wherein authorial processes of production may not be so easily discerned. Moreover, a genetic critique of Pentametron's output, or of any algorithmically-authored text, cannot depend on an exploratory analysis focused on individual authors, but must relate to a larger body of research that emphasises interpretative analysis based on program development and reader response. Authorial intention is relevant in at least two ways: the first, in Ranjit Bhatnagar's creation and adjustment of the program; and the second, in creative projects inspired by Pentametron's output. However, Pentametron's output is moved into multiple directions through the interpretations and intentions of multiple individuals. A genetic critique involving the program, then, must account for this kind of 'co-writing', and work towards negotiating multi-directional avant-textes with their own mobile images and truths.

Pierre-Marc de Biasi writes that the genetic approach is "characterized by a certain calling into question of the *authority of the text*, with very close attention paid to the way(s) in which it was elaborated" ("Horizons", 124-125). As readers continue to respond to algorithmically-authored outputs through creative means such as song writing and fan fiction, it becomes ever clearer that these outputs are not so much final texts to be subjected to genetic critique themselves, but are instead modern manuscripts, avant-textes, contributing to understandings of other texts' truths. These modern manuscripts are not necessarily rewritten during a text's evolution, but adapted: as readers embed Pentametron's initially nonsensical output with meaning through processes of human-computer symbioses, they make sense out of the senseless. Considered in isolation, Pentametron does not necessarily lend itself to genetic critique. Considered in relation to its offshoots, though, it becomes a rich source of inspiration for creative projects that untangle butterflies, busy weekends, and chicken salad.

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