In the event of a variable text

JR Carpenter
Independent scholar, UK

Abstract
Walter J Ong argues: 'The spoken word is always an event, a movement in time, completely lacking in the thing-like repose of the written or printed word'. Digital writing has given rise to a new regime of enunciation in which written words refuse repose. This essay argues that although spoken, written and printed words operate within radically different temporal planes, spoken words also have thing-like properties and written and printed words also move through time. Digital writing has given rise to a new regime of signification unforeseen by Ong in which written words refuse repose. Jay David Bolter argues that digital writing 'challenges the logocentric notion that writing should be merely the servant of spoken language . . . The writer and reader can create and examine structures on the computer screen that have no easy equivalent in speech'. N Katherine Hayles argues that, in digital media, the text 'becomes a process, an event brought into existence when the program runs . . . The [text] is "eventilized," made more an event and less a discrete, self-contained object with clear boundaries in space and time'. Jean-Jacques Lecercle argues that language is a constructed system, constantly subject to change . . . 'We therefore need to conceive of language not as a stable, arrested system, but as a system of variations'. This essay draws upon a diverse corpus of literary, media and performance theory and practice to establish a critical framework for examining the performance of variable texts throughout the entire apparatus of hardware, software, networks, bodies and spaces within and through which they operate and propagate. This framework is applied to a number of examples of digital writing which incorporates variability, instability, transformation and change into the process of composition, resulting in texts which are both physical and digital, confusing and confound boundaries between speaking, writing and reading.

Keywords
Computer-generated text, digital literature, digital publishing, event, iteration, JavaScript, materiality, media archaeology, performance, performance writing, variable text

Corresponding author:
JR Carpenter, Plymouth, UK.
Email: carpenter@luckysoap.com

Introduction

There are lots of beginnings. Let's start with this one: In the beginning was the word, and the word was spoken by a body, and the word was breath. This was an event. It took place. It took time. When we read about it in the paper afterwards, what we read was writing and what we did was reading. Then, the story started to change. On the Internet, the material properties of the written word kept changing – its colour, its size, its placement, and its location in computer memory. The word itself changed – its letters, its syntax, and its meaning. This variable text was also an event. This was also writing. This was also reading. The body was still involved, at a slight remove. The hand hovered over the mouse, the eye flickered across the screen.

The material dialectics presented by digital and in other ways variable writing trouble certain long-standing distinctions made by linguists and philosophers alike, between spoken, written, and printed words. Chief among these is the notion that the spoken word is alive, nimble, temporary, and immaterial, whereas the written word is stable, immutable, permanent, and fixed. The finer points of this distinction were argued in Plato's *Phaedrus*, composed around 370 BCE. In this dialogue, Plato argues through the written voice of his teacher Socrates that, whereas speech is 'written with intelligence in the mind of the learner, which is able to defend itself and knows to whom it should speak, and before whom to be silent' (Fowler, 1925: 276a), words written in ink through a pen 'cannot defend themselves by argument and cannot teach the truth effectually' (276c). In *Orality & Literacy: The Technologizing of the Word*, Walter J Ong articulates the distinction between spoken and written words in temporal terms: 'The spoken word is always an event, a movement in time, completely lacking in the thing-like repose of the written or printed word' (Ong, 1982: 75). This essay will argue that although spoken, written, and printed words operate within radically different temporal planes, spoken words also have thing-like properties and written and printed words also move through time. In making this argument, this essay will draw upon performance writing methodology (Carpenter, 2015b; Fletcher, 2013; Hall, 2013). Performance writing takes a conceptually broad and overtly interdisciplinary approach to considering the performance of text in relation to a wide range of social, cultural, material, mediatic, and disciplinary contexts. Within this methodology, the intelligibility of that which is written is understood to be intertwined with both the context of its production and of its consumption. The act of writing performs texts for possible future readers; the act of reading performs that which has been written. Integral to this methodology is the notion that the act of writing (and of reading) is always a performance, and that which is written (and read) is always material.

This pragmatic approach to writing is particularly well suited to expanding and adapting to accommodate new questions posed by new critical contexts. Digital writing, for example, has given rise to a new regime of signification unforeseen by Ong in which written words refuse repose. In *Writing Space: Computers, Hypertext, and the Remediation of Print*, Jay David Bolter argues that digital writing 'challenges the logocentric notion that writing should be merely the servant of spoken language. . . . The writer and reader can create and examine structures on the computer screen that have no easy equivalent in speech' (Bolter, 2001: 36). In the introduction to a special issue of *Performance Research* dedicated to writing and digital media, Jerome Fletcher observes that in a standard literary response to the relationship between text and performance, performance comes after writing and suggests that rather than seeing performativity 'as the end-point, the outcome of the digital device or apparatus, we can consider the question of how writing performs throughout the entire apparatus' (Fletcher, 2013: 1). This essay draws upon a diverse corpus of literary, media, and performance theory and practice to establish a critical framework for

examining the performance of variable texts throughout the entire apparatus of hardware, software, networks, bodies, and spaces within and through which they operate and propagate. This framework will then be applied to a number of examples of variable texts, which are both physical and digital and which confuse and confound boundaries between speaking, writing, and reading.

The thing-like properties of the spoken word

The spoken word escapes the body as breath and immediately it is captured. Thing-like it hangs frozen in the air on a cold morning, carves a path on a wax cylinder, wakes waves on water, displays green peaks and valleys on digital monitors, and tickles the stereocilia of another body. Spiralling toward an inner ear, the spoken word becomes part body again – mingling air, hair, fluid, and flesh. Outside the body, out in the world, the spoken word is a physical thing – a sound wave bumping into other things for which the word may have ramifications, but no specific meaning. Inside the body of the speaker and of the listener, the spoken word is part of language. In *Speech Acts: An Essay in the Philosophy of Language*, John R Searle hypothesizes: 'speaking a language is engaging in a rule-governed form of behavior ... speaking a language is performing speech acts, acts such as making statements, giving commands, asking questions, making promises' (Searle, 1969: 16). When we speak words which have written equivalents, as we do in English, we perform possible future written texts.

What transpires between the movement of the spoken word and the stillness of the written word, between the event and the thing-like repose of the page? In *Writing and Difference*, Jacques Derrida proposes that the act of writing transpires in the moment of separation of the word from the body. In this moment, '[w]riting is displaced on the broken line between lost and promised speech' (Derrida, 1978: 68). Speech is already lost insofar as the thing-like breath has already sped away from the body and promised insofar as the performance of a speech act ties the speaking body to the wider social and political context of rule-governed language. The word is spoken by a body and there may be consequences; writing may be among them. Writing may record the event of a word already spoken, or a word not yet spoken. Writing intended to incite a future speech act may never do so, may never be read. Spoken words may pour through a headset to be absorbed by a listening body – a poor medium – and emerge as writing, escape fingertips, clatter onto keyboards, scatter toward far corners of the globe without ever once gracing a thing-like page.

Written and printed words moving through time

The printed word and the written word move more slowly than the spoken word. The printed word moves through time at a bookworm's pace. Silverfish feed on page starch. Mildew stains and musts. Sunlight and moonlight yellow paper and fade ink. Ong lumps written and printed words together as equally thing-like, yet the written word may move faster than the printed word. The handwriter's scrawl may far exceed the typesetter's pace. In Writing Machines, William Winder asserts: 'Printing and writing are clearly related. Like printing, writing is machine-mediated language, though the machine may be as simple as a pencil' (Winder, 2008: n.p.). Words written with pens, pencils, or chalk may smudge or be erased with greater ease than words impressed upon a page by a letterpress or Heidelberg printing press. A plethora of printing techniques fall between these extremes. The mimeograph forces liquid ink through a flimsy stencil onto single sheets of paper. The spirit duplicator stains paper through wax and solvents which gradually fade with exposure to ultraviolet light. However, slowly the word may

move in relation to the page, the page itself may travel at a breakneck pace. It may be turned, flipped, crumpled, cut, folded into a booklet or a pamphlet, folded into an envelope and posted, flown air mail over oceans in the night.

Words written with computers may fly onto the screen and into computer memory simultaneously at a rate of 90 words per minute. Hundreds of thousands of words may be erased by a single keystroke. Printed words move more quickly than they used to. Printed on computer screens, printed on demand, formatted but never quite printed, stored instead as Portable Document Format files in computer memory – within the digital regime printed words have become slippery things, multiple, mutable, and radically atemporal. The vast majority of the text produced by computer systems – protocols, listings, programmes, temp files, error logs, and binary codes – is never seen or read by humans. As our use of digital devices grows, text we did not write and cannot read increasingly influences our daily thoughts and actions. As a society, we have yet to fully perceive let alone begin to address the resulting analphabetism.

Performance writing is broadly concerned with the performance of all writing – legible or otherwise – as it operates on and off the page, inside and outside the machine, on stage, online, and on screen. As a field of study, digital literature has thus far been primarily concerned with the literary aspects of digital writing. The oft-quoted definition offered by the Electronic Literature Organization website clearly states: 'Electronic literature, or e-lit, refers to works with important literary aspects that take advantage of the capabilities and contexts provided by the stand-alone or networked computer'. Given how large the technology of the book looms in the field of literature it is hardly surprising that certain print-biased critical tendencies persist in digital literary scholarship. In *Writing at the Limit: The Novel in the New Media Ecology*, Daniel Punday observes, 'many new media theorists have noted that it is a particular weakness of literary critics to emphasise those elements of new media that are the most similar to print narrative' (Punday, 2012: 201). Just as literary studies tends to focus its critical attention on written words rather more than on the material substrate of the ink, the page, the book, the printing press, and the complex global network through which words are distributed, so too digital literary studies tends to focus on words as they appear on screen or as they are written within human-authored source code with cursory attention to the material substrate of either the device on which words are written or read or the networks through which they travel. Media archaeological scholarship has thus far focused primarily on audiovisual media. Certain notable ventures into textual media are emerging. Noah Wardrip-Fruin merges digital literary and media archaeological methodologies in his excellent work on British computer scientist Christopher Strachey's *Love Letter* generator, a variable text programed on the Manchester University Computer in 1952. Wardrup-Fruin attributes to Strachey 'the first experiment with digital literature and digital art of any kind' (Wardrip-Fruin, 2011: 302). In general, however, media archaeology tends to take a more ontological approach to digital media, focusing on processes, procedures, symbols and operations internal to the device, eschewing subjective narrative, aesthetic or qualitative interpretations of outcomes or outputs. In 'Media Archaeography', Wolfgang Ernst argues: 'Human beings, having created logical machines, have created a discontinuity with their own cultural regime' (Ernst, 2011: 251). Performance writing reconciles these disciplinary disparities through insistence on an interrogation of both the written word and its material substrate as well as through an acknowledgement that this is by no means the first time that we have created a discontinuity with our own cultural regime.

In Plato's *Phaedrus*, Socrates recounts the myth of the invention of writing by the Egyptian god Theuth. Presenting his invention to the god Thamus, king of all Egypt, Theuth claims that writing

will make Egyptians wiser by improving their memories. Thamus counters that writing will have the opposite effect:

> this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them. (Fowler, 1925: 274c)

Prescient predictions indeed. We rely increasingly on mechanisation to store our spoken and written words. We use proprietary platforms to record, distribute, and store our textual, audio, and visual memories. In *Gramophone, Film, Typewriter*, Friedrich Kittler articulates a 'switch from writing to media' (Kittler, 1999: 86), framing writing stored in books as self-conscious, subjective, laden with meaning, and thus limited, and claiming: 'Mechanisation relieves people of their memories and permits a linguistic hodgepodge hitherto stifled by the monopoly of writing. . . . The epoch of nonsense, our epoch, can begin' (Kittler, 1999: 86). The technological determinism underpinning Kittler's framing of writing as being in opposition to the machine is as outdated as Ong's framing of orality as being in opposition to writing. Contrary to assertions made by media and literary theorists alike, that 'new' media of reading and writing constitute a rupture with the past, performance writing sees the digital as part of an ongoing system of variations in media, wherein writing may be simultaneously stored in printed books, searchable digital files, change-able human memories, and indexable databases. Although it operates in the non-narrative numer-ical logic of the computer, digital literature is a human textual product. Centuries of page-based experiments have contributed to pushing the boundaries of writing into non-linear, intertextual, multimodal, performative, and mechanized realms.

Performance writing's material approach to language and to writing is informed by a Marxist tradition of materialism which considers language in relation to the power structures it exerts, and incorporates aspects of various strands of new materialism which consider language as an event occurring in relation to the complex temporalities, encoded spaces, and radical multi-plicities of site and of the body. As such, a performative consideration of the movement of written words through digital communications networks such as the Internet necessarily incor-porates coastlines and oceans, undersea cables and satellite dishes, electrical currents and rare earth minerals, and the causal chain of interpellation (Lecercle, 2006: 102) between physical distance, material media, code language, and the assemblage of collective utterance which performs digital texts in live contexts.

Performance writing recognized early on that one of the areas of its investigation would be the impact of the digital on the creation and display of writing. In 'Thirteen Ways of Talking about Performance Writing', a lecture given to all first year undergraduates of Dartington College of Arts in 1994, John Hall noted: 'Developments in computer technology open up new possibilities by the month' (Hall, 2013 [1994]: 33). As a Principal Investigator in the Electronic Literature as a Model of Creativity and Innovation in Practice research project, Jerome Fletcher, Associate Professor of Performance Writing at Falmouth University, contributed significantly to the expansion of performance writing methodology into the realm of the digital literary (Fletcher, 2013). In my own practice-led PhD research (Carpenter, 2015b), I aimed to further this expansion of performance writing methodology and sensibility into digital literary theory and practice in part through employment of research methods informed by material and embodied practices of visual and performing arts. In *Reading Writing Interfaces: From the Digital to the Bookbound* (2014), Lori Emerson takes a media archaeological approach to examining the

interfaces of contemporary works of digital literature, calling attention to Marshal McLuhan's early pairing of literary and media studies, a critical approach largely ignored by media theorists until recently. Emerson argues 'this pairing forces us to read the work of innovative poets as performing studies of the limits and the possibilities of certain writing media' (Emerson, 2014: 91). Emerson's use of the term 'performing studies' echoes the mode of thinking through doing advocated by performance writing methodology. Practice-led research in the field of digital literature necessarily involves an active participation in reading, writing, performing, theorizing, and publicly presenting both physical and digital texts in a wide range of social, mediatic, and disciplinary contexts.

A system of variations

Writing is an iterative process. Texts may start as thoughts or speech acts, may go through drafts, may refer to other texts, films, artworks or places, may be translated into other languages, and may be adapted into other media. In order for a novel to become a print book a writer must aim for completion, resolution, a fixed, final, stable text. This condition imposed by print media has furthered the notion that written words are thing like, in contrast to the fluid movement of spoken language. This notion is enforced by Saussurian linguistics which conceives of language as a stable system, internal to itself, unconcerned by societal influences. In *A Marxist Philosophy of Language* (2006), Jean-Jacques Lecercle observes that, far from being stable, language is in fact a constructed system, 'constantly subject to historical change' (Lecercle, 2006: 11). Lecercle calls instead for a conception of 'language not as a stable, arrested system, but as a *system of variations*' (11) (emphasis from the original). Similarly, in *Deep Time of the Media* (2007), Sigfried Zielinski calls for a *variantology* of media, suggesting:

> Instead of looking for obligatory trends, master media or imperative vanishing points, one should be able to discover individual variations...fractures or turning points...that provide useful ideas for navigating the labyrinth of what is currently firmly established. (Zielinski, 2008: 7)

Taking up these calls for variation, the performance writer incorporates variability, instability, transformation, and change into the process of composition, so that the writing is never fixed, final, or stable but rather, constantly subject to change. John Hall writes: 'The performance writer writes the space between the writing and the performing, where the writing is always about to leave to become something else' (Hall, 2013: 27). Performance writing methodology is useful to digital literary scholarship precisely because all digital writing operates in-between spaces – between server side and client side, between source code and output. Likewise, the variability of digital writing poses exciting new possibilities for scripted live performance. In *Dramaturgy and the Digital*, Barbara Bridger highlights the need for new critical approaches to performance that are:

> flexible enough to adapt to work where [...] the definition of text and scripting and chance can extend to programmed material; where authorship is concerned with the modification of systems, or work produced by complex communication networks and the results are available to an infinite number of participators. (Bridger, 2013: n.p.)

Consider, for example, the variable audiovisual digital performance writing works of Jörg Piringer. In *frikativ* (2007) Piringer generates visual sound poetry in real time by speaking and vocalizing fricatives into a microphone. Fricatives are audible frictions, consonant sounds

Figure 1. Jörg Piringer performing *abcdefghijklmnopqrstuvwxyz* at Machfeld Studio, Vienna, in 2010. *Source:* Photo by JR Carpenter.

produced by forcing breath through a narrow, constricted, or partially obstructed channel. In the live performance of *frikativ*, the channel of the vocal tract is appended to that of the microphone, which is further extended by cables to a computer wherein live and prerecorded voice sounds are modified through signal processors and samplers. Custom software written by Piringer then analyses these sounds to create animated abstract visual text-compositions which are projected behind Piringer, as pictured in Figure 1.

Through a long, ongoing, iterative, and intrinsically performative writing process, Piringer has created a massive custom-written computer program with which he builds his live performance works. Similar to the way one game engine can be used to create a wide range of different games, Piringer can now draw upon his own code base to create new behavioural logic sets for each new performance. In another performance called *abcdefghijklmnopqrstuvwxyz* (2009-ongoing), Piringer expands the visualization process employed in *frikativ* to create a much more complex and reactive system. Sounds are spoken by the body. The computer hears these sounds, which, it is repeatedly told by the software, are letterforms. Once output by the software to the screen these letterforms continue to interact with one another creating kinetic visual compositions quite outside the control of Piringer. In its cooperative moments, the computer becomes a digital extension of the voice of the poet-programmer. Together, the body of Piringer, the code he has written, and the hardware he has assembled perform speech acts which result in audiovisual compositions, generate unforeseeable abstractions, and improvize endlessly variable poetic potentialities. Like all speech acts, even as they are uttered, they are always already vanishing. Piringer's live performance works operate on the broken line evoked by Derrida, between lost and promised speech, in the moments immediately after the breath has left the body, at the axis where human voice, machine language, and letter forms meet.

JavaScripts for live performance

In the event of a variable text, long-standing conceptions of what a written text is and does can and must change. In the above-cited example of Piringer's work, questions arise as to where the text resides – in computer memory, in the body, on the screen? When precisely does this textual assemblage become 'the' text, the literary work, an entity suitable for scholarly study? In *The Time of Digital Poetry: From Object to Event* (2006), N Katherine Hayles argues that, in digital media, the text:

> ceases to exist as a self-contained object and instead becomes a process, an event brought into existence when the program runs. . . . The [text] is 'eventilized', made more an event and less a discrete, self-contained object with clear boundaries in space and time. (Hayles, 2006: 181–182)

In a similar vein, in *What is Digital Materiality?* (2013), Johanna Drucker argues that 'an event-based approach to the material inscription and symbolic notation of digital code shifts the ground of analysis from discussion of their formal properties, as if they were independent of the circumstances of iterative production' (Drucker, 2013: 127). A material contextual understanding of a digital text as an event, a movement in time, rather than a self-contained thing-like object is critical to the reading of all digital texts produced by and performed within complex assemblages of bodies, devices, and networks, and available to an infinite number of participators. A Tweet, for example, will appear differently in the reader's timeline than in the writer's because the reader follows different accounts than the writer, uses a different browser or app, with a different screen size, and reads at a different time of day.

In *Electronic Literature: New Horizons for the Literary* (2008), Hayles makes a critical distinction between 'literature' and 'the literary', pointing to the latter as having a much broader conceptual framework, within which certain literary hybrids may bridge physical and digital modes of creation and dissemination (Hayles, 2008: 4–5). Given the radical atemporality and multimodality of our current digital regime of enunciation, the overt interdisciplinarity of performance writing offers additional reading strategies for literary texts which are both physical, digital, spatial, and embodied and which incorporate non-textual visual art techniques such as collage, as well as more scientific techniques such as map reading.

Consider the following example of a work which is both spoken and written, physical and digital, visual and textual, thing-like, and event. *The Broadside of a Yarn* (Carpenter, 2012) was first exhibited at Inspace gallery in Edinburgh, United Kingdom, as a discontinuous map printed on fifteen A3-paper-sized squares arranged in an asymmetrical grid. Embedded within the visual cartographic space of the printed map are 13 quick response (QR) codes which link to smartphone-optimized web pages containing variable narrative dialogues intended to serve as scripts for live performance. Each QR code contains a URL, that is to say, an address, pointing to a location in the memory of a web server sitting on a rack in an air-conditioned room in a building in a town in a country with laws pertaining to the storage and movement of data. Every time a QR code is scanned by a QR code reader, the application, the camera, the smartphone, the Internet, the web server, the web browser, and countless commands, protocols, softwares, and hardwares in between conspire to collectively perform a set of JavaScripts which, in turn, generate a variable performance script on screen which then may or may not be read by human eyes, spoken by human voices, heard by human ears. Whether it is read by humans or not this text will soon shift and change on screen as its variables call new arguments. In an object-oriented programming language like C, variables refer to fixed locations in computer memory. In JavaScript, however, the

operation of processes including memory is distributed across networks and devices. The arguments a variable refers to may be located anywhere. Once it has been referred to, through a process known as garbage collection, an argument may disappear. Or, the reference to it may disappear. JavaScript's mode of dispersed, temporary, and transitory memory allocation is well suited to the rereading, researching, and rewriting of transient, variable texts.

It is no coincidence that the word 'script' appears in the name 'JavaScript'. JavaScript is a procedural language in which information and instructions must be presented in a certain order in order to be performed by the computer. In the event of a variable text, the computer, and all its associated distributed network of hardwares, softwares, files, commands, and executions, selects words from preset lists called variable strings and slots them into syntactic templates called sentences. In *The Order of Things* (1994), Michel Foucault describes the classical sentence as a signification engine; a mechanical construction which performs the task of linking otherwise disassociated elements together. He writes, 'in a single continuous sentence it is possible to indicate relations of time, of consequence, of possession, and of localization' (Foucault, 1994: 100). In a variable sentence, these relations are continuously changing in relation to one another as time passes. Each act of selection of an argument from a variable string performed by the JavaScript constitutes a statement event. For Foucault, the statement event is at the very root of the archive and 'defines at the outset the system of its *enunciability*' (Foucault, 2002: 146) (emphasis from the original).

> Between the language (langue) that defines the system of constructing possible sentences, and the corpus that passively collects the words that are spoken, the archive defines a particular level: that of a practice that causes a multiplicity of statements to emerge as so many regular events, as so many things to be dealt with and manipulated. [. . .] it reveals the rules of a practice that enables statements both to survive and to undergo regular modification. It is the *general system of the formation and transformation of statements*. (Foucault, 2002: 146, emphasis in original)

If we take the language that defines the system to be JavaScript, and the corpus to be the content of the variable strings, then the digital text component of *The Broadside of a Yarn* is both an archive of potential textual events and a system for enacting them. Just as the speech act engages the body in a rule-governed form of behaviour, the source code reveals the rules of a practice of writing in which event statements retain their structure even as they undergo regular modification.

The QR code in the map square pictured in Figure 2 links to a variable performance script called 'Trading Lip for Ear'. This script may be viewed on a smartphone using a QR code reader to scan the QR code pictured in Figure 3 or on a computer at the following address: http://luckysoap.com/broadside/lipforear.html.

The variable strings called by this script contain lines of dialogue appropriated from Joseph Conrad's novella *The Secret Sharer* (1950 [1910]), in which the captain of a ship takes an escaped prisoner of another ship on board and hides him in his cabin. All of the dialogue between the captain and the secret sharer of his cabin are exchanged in hushed tones in close quarters, hence the script's stage instructions: *To be read by two hushed voices, heads together.* Consider the following two lines of source code:

```
captainquestion: 'CAPTAIN: #{captainquestion}',
shareranswer: 'SHARER: #{shareranswer}',
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The captain will always ask a question and the sharer will always answer, but until the QR code is scanned, until the URL locates all of the resources required to perform this script, there is no way
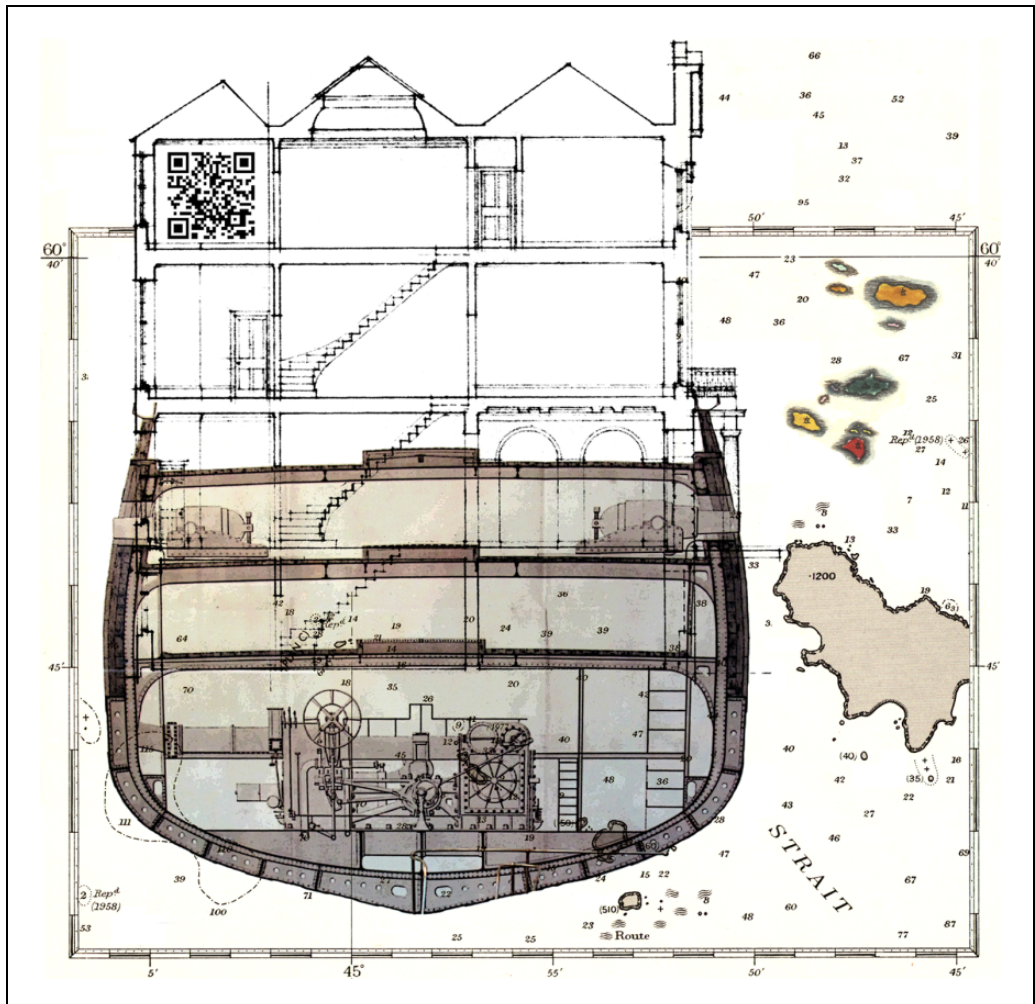
Figure 2. JR Carpenter (2012) 'The Broadside of a Yarn', *Remediating the Social,* Inspace, Edinburgh, UK – detail. *Source:* Image by J.R. Carpenter.

of knowing what the captain will ask and what the sharer will answer. The following is but one of a near infinite number of possible variations of this script:

> TRADING LIP FOR EAR
> To be read by two hushed voices, heads together.
> SHARER: What's the good?
> CAPTAIN: Is there another shower coming?
> SHARER: I want no more.
> CAPTAIN: Now you must vanish. (aside) Had my double vanished as he had come?
> [repeat]
> J.R. Carpenter & J. Conrad

Figure 3. JR Carpenter (2012) *The Broadside of a Yarn*. Detail – QR code linking to 'Trading Lip for Ear'. *Source:* Image by J.R. Carpenter. QR: quick response.

Once the statement events contained in the source code have been performed by the web browser resulting in words printed on screen, this variable text will continue to undergo regular modification through the rule 'generator1.play(17000)', which refreshes the variables every 17000 milliseconds. A set of controls appears beneath the script, offering participants in this text the options FAST, SLOW, STOP, STEP, and UNCANNY. The first three do what they say – speed up the generator, slow it down, and stop it from producing further generations. Selecting the fourth option, STEP, will generate a new variation which will stay static on screen until STEP is selected again. Selecting the final option, UNCANNY, generates a new variation of the script in which the dialogue between the sharer and the captain is followed by a quotation from Freud's essay 'The Uncanny' (2003 [1919]). The following is one possible UNCANNY variation:

TRADING LIP FOR EAR
To be read by two hushed voices, heads together, with occasional interruptions from Freud.
SHARER: Are you alone on deck?
CAPTAIN: Something wrong?
SHARER: Very wrong indeed.
CAPTAIN: Yes. (aside) (We could talk only with our eyes.)
FREUD: Repetition recalls the helplessness we experience in certain dream states.
[repeat]
J.R. Carpenter, J. Conrad & S. Freud

What does the rereading and rewriting of these page-based texts in this new digital literary context reveal about the their structural underpinnings? As each new variation of this JavaScript is performed by the web browser an uncanny resemblance emerges between Conrad's novella and Freud's essay. Although 'The Uncanny' was published nine years after *The Secret Sharer*, Freud's statements appear to resound the captain's asides so closely as to confuse and confound social,

formal, temporal, and disciplinary boundaries between spoken, printed, and digital words and between the sharer and the captain, the novella and the essay, the screen and the stage play, and psychology and literary fiction.

Assemblages

In *The Broadside of a Yarn*, the print map serves as a thing-like interface through which written words become events, movements in time, systems of variation, constantly subject to change. In *Deleuze and Language*, Jean-Jacques Lecercle suggests that, contrary to the practice of linguistics, which aims to 'clip the wings of language to keep it still and make it manageable for dissection' (Lecercle, 2002: 71), the practice of cartography 'treats language as a plane, of immanence and of consistency; it respects the heterogeneity and diversity of language, to does not freeze its currents of becoming into structures, it does not force its lines of flight into a hierarchy of channels' (Lecercle, 2002: 71). In *The Broadside of a Yarn*, the print map sits at an axis, between print and digital, between *langue* and *parole,* between what is said and what is done, and between what Gilles Deleuze and Félix Guattari term machinic assemblages and assemblages of collective enunciation. Within the assemblage:

> There is no longer a tripartite division between a field of reality (the world) and a field of representation (the book) and a field of subjectivity (the author). Rather, an assemblage establishes connections between certain multiplicities drawn from each of these orders. (Deleuze and Guattari, 2007: 22)

To a performance writer, parentheses such as these invite the replacement of statements with new variations. In place of the world, we have the screen. In place of (yet retraining traces of) the book, we have the source code(s). The authorship of a digital text is always collective. The Internet, with its billions of lines of unattributed code, is a machinic assemblage of the highest order. The establishment of connections between these multiplicities results in an eventilized text, which constitutes a collective assemblage of enunciation. Within this formulation, the assemblage is not an end result but rather an ongoing process, a mode of establishing connections between multiple media as they perform simultaneously in semiotic, social, and material contexts. How might JavaScript and the system of variations it affords be used to examine other well-known works, formats, and modes of publication of print literature through the assemblage of hybrid corpora of print, digital, poetic, narrative, creative, and critical texts and contexts?

Context is everything

One of the principle tenants of performance writing methodology is that context is everything. In addition to considering digital texts as events, as processes performing within and through the material context of an assemblage of hardware, software, networks, and protocols, we must also consider these texts within the context of the new modes of publication afforded by the digital regime. Consider the online journal, for example. With notable exceptions, the vast majority of online literary journals have retained many of the expectations of the print journal: in particular, that poems, short stories, essays, and reviews will retain their traditional recognizable forms, and that the words on the web page will remain static, thing-like, still. In May 2015, the UK-based online literary journal *The Junket* published a text called 'Once Upon a Tide' (Carpenter, 2015a) which, at first glance, looks like all the other texts in the issue – same layout, same font. Upon first reading, however, somewhere past the midway point the reader experiences 'the first twitchy

moment of detecting movement in the text' (Nick Montfort, 2015, personal communication). Through the performance of reading, 'Once Upon a Tide' is revealed to be a variable, restless, shifting narrative. Turns of phrase, stage directions, and lines of dialogue from the script of Shakespeare's *The Tempest* (1610–11) are randomly, repeatedly, and somewhat enigmatically recombined by JavaScript within a close, tense, ship-bound narrative setting reminiscent of Joseph Conrad's aforementioned novella *The Secret Sharer* (1950 [1910]). On the deck of a ship off the shore of an island, two interlocutors are closely observed by a narrator who remains hidden from view.

Not quite a short story, not quite a stage play, as is elaborated in an introductory essay on *The Junket*, 'Once Upon a Tide' is one of those moments in literature when time . . . stands . . . still. When plot advances by simply refusing to budge. One of those waiting times, slack tides, great hollows within which heat intensifies, cold deepens, night thickens, fevers rage, or the sun continues its relentless blaze. Tension builds, and still nothing happens; neither the sight of a sail on the horizon nor the slightest breath of wind. It is within these long stillnesses that sailors' yarns unravel. In Conrad's novella *Heart of Darkness* (1950 [1899]), the entirety of Marlow's tale is recounted in one evening while sitting utterly still on the deck of a ship moored on the Thames. In the pitch dark and the heavy night air of the river, the narrator strains to discern meaning from Marlow's speech: 'I listened, I listened on the watch for the sentence, for the word, that would give me the clue to the faint uneasiness inspired by this narrative that seemed to shape itself without human lips' (Conrad 1950 [1899]: 95).

In long-form fiction, these extended feverish pauses eventually break. In the event of a variable text, however, we may hover forever within the tense and nuanced mediatic relation between reading, listening, watching, and waiting for the sentence, the word, the clue. . . . This generative in-between space engenders questions of the text: What tide is this – spring, slack, or neap? And what of this ship – charmed, safely in harbour, or bound sadly home? Are the interlocutors slight, strong, or old? Are they mariners, travellers, or strangers? Where are they from exactly? And what on earth – or sea – are they talking about? To each of these questions, the answers are endlessly and variable and always temporary.

There is no logical reason to cause Conrad-esque characters to speak Shakespearian dialogue. The compulsion to do so is born of reading and rereading sea stories across genres and across centuries. In the introductory essay which accompanies 'Once Upon a Tide' on *The Junket*, the reader is encouraged to do the same – to read and reread, aloud if possible. The controls at the bottom of the variable narrative allow the reader to read the text more quickly, more slowly, to stop the text from shifting, or to move on to a new permutation of this sea-sorrow, to suffer a sea change into something rich and strange. In engaging with these controls, the reader becomes an active participant in the text. Each click performed by the reader's body triggers a new digital textual event.

Readability

Since the rise of the mainframe computer, literary authors and critics alike have expressed anxiety about the computer's ability to write narrative prose and poetry as well as humans, or better. In 1948, British children's book author Dahl published a short story called 'The Great Automatic Grammatizator' in which a machine writes such excellent fiction that its creator soon dominates the field of publishing. In 1950, the American novelist Vonnegut published a short story called 'EPICAC' featuring a fictional computer of the same name which wrote love poetry. Strachey's

aforementioned *Love Letter* generator, programmed in 1952, has been largely ignored by digital literary scholars until recently. Christopher Funkhouser makes no mention of it whatsoever in his influential book *Prehistoric Digital Poetry: An Archaeology of Forms, 1959–1995* (2007). When I asked about this omission, Funkhouser replied:

> I was aware of Strachey's work but did not consider it to be in the realm of poetry–at least as I was willing to define it (which was pretty wide!). (Christopher Funkhouser, January 2013, personal communication)

As a result of this literary distinction between poetry and narrative, some scholars and students of digital arts and literature remain unaware of Strachey's early mainframe experiments. Stepping outside the disciplinary silos of computer science or print or digital literature, a broader contextual consideration of the social, political and cultural conditions under which the work was created invites intriguing new readings. Vonnegut's fictional EPICAC computer reappeared in his novel *Player Piano* (1952), in the same year as Strachey's *Love Letter* generator. It is well within the realm of possibility that Strachey's enigmatic choice of the love letter as a literary form through which to test the random number facility of the Manchester University Computer was inspired by a work of print literature.

Consider another example of another web-based work of digital literature which calls fragments from two seemingly disparate yet equally well-known works of print literature into a variable eventilized digital textual process. Nick Montfort and Stephanie Strickland's *Sea and Spar Between* (2010) incorporates fragments from the sparse poems of Emily Dickinson (1831–1886) and dense prose from Herman Melville's novel *Moby Dick* (1851). The spaciousness of Dickinson's dashes – 'you—too—' – merges with the oceanic churning of Melville's prose – 'leagueless sing and steep' – in stanzas assembled from words common to both and unique to each. These loosely coupled language systems create a vast verse-scape within the web browser window, chartable by longitude and latitude displayed at the bottom of the screen, and navigable by keystroke, mouse-click, or scroll wheel. Long-time collaborators, Montfort and Strickland interject human-readable critical commentary into their computer-readable source code, offering readers a number of ways into the text and inviting other authors to adapt and modify their work.

Taking up this call, in 2013, Mark Sample adapted the source code of *Sea and Spar Between* to create a new work, *House of Leaves of Grass*, based on the combined corpus of Mark Z Danielewski's novel *House of Leaves* (2000) and Walt Whitman's poetry collection *Leaves of Grass* (1891–1892). The hybrid corpora of both these examples combine and thereby dissolve formal distinctions between works of poetry and prose. Both *Sea and Spar Between* and *House of Leaves of Grass* contain links to web pages which offer information on how to read the work. In keeping with their watery theme, Montfort and Strickland write: '*Sea and Spar Between* is a poetry generator, which defines a space of language populated by a number of stanzas comparable to the number of fish in the sea, around 225 trillion' (2010). In keeping with his house theme, Sample writes: 'The number of stanzas (stanza, from the Italian word for 'room') approximates the number of cells in the human body, around 100 trillion' (2013). Born of a process of reading and rereading a finite corpus of print literature, by dint of the volume of their potential output these variable texts court unreadability. Of *Sea and Spar Between* John Cayley asks: 'If we can only bring some minuscule portion of a huge virtual linguistic artifact into actual existence for our critical consideration . . . does the work exist at all?' (Cayley, 2014: 17). These works exist as events, not artifacts. As such, they refuse close reading as a critical strategy. They demand, instead, a

pragmatic reading which considers both the source code and the screenic output of the works in relation to their material contexts. A pragmatic reading clearly indicates that whether we can read them or not these works do indeed exist – as files on a web server and as files moving through a network, as words temporarily printed on a screen and as words moving across a screen in response to the bodily gestures of the mouse hand, as JavaScript and as performance script, as potential and as event. In the event of a variable text, critical consideration must begin not with the minuscule portion of text printed on screen but rather at the perceived thresholds between these paradoxical states.

Conclusions

Digital writing has given rise to a regime of signification in which long-standing distinctions between spoken, written, and printed words have become blurred. No longer discreet entities, no longer easily quantifiable objects for study or for sale, digital literary texts demand a new critical approach to reading and writing. This essay has proposed performance writing as methodology particularly well suited to expanding, adapting, and incorporating aspects of literary, visual, media, and performance art practices as well as digital literary and media archaeological scholarship to consider the performance of digital texts in relation to a wide range of material, mediatic, social, and disciplinary contexts. In particular, this essay has invited the consideration of variable texts as events, movements in time, processes, assemblages, and systems of variations. A critical framework has been presented for reading, writing, and writing about variable texts in these terms. This framework takes into account the paradoxes inherent in variable texts which are both physical and digital, spoken and written, machinic processes and human literary outputs. The need for such a framework is made apparent by the shifting terrains within which variable texts operate, propagate, are performed, and are publicly consumed. For example, the publication of a variation of Piringer's live performance work *abcdefghijklmnopqrstuvwxyz* as an iOS app of the same name suggests that new digital platforms offer poet-programmers new avenues for self-publishing, resulting in new streams of revenue and new audiences. The publication of the variable text 'Once Upon a Tide' in an otherwise static-page online journal suggests a growing willingness on the part of literary editors and publishers to move beyond the mere replication of printable texts in digital contexts, toward embracing and promoting new forms of writing engendered by and native to new digital formats. The publication of Montfort and Strickland's essay 'cut to fit the toolspun course' as critical code commentary embedded in an executable JavaScript file in the peer-reviewed online academic journal *Digital Humanities Quarterly* (2013) suggests a growing scholarly interest in new modes of digital literary criticism.

Although the examples of digital writing presented herein have been decidedly literary, this critical framework may also be applied to a broader study of digital writing practices. A contextual understanding of digital textuality makes clear that all digital writing is variable to some degree. All Internet-based writing, for example, emerges from, refers to, and thus must be understood within the complex context of the Internet itself, which is in fact a conglomeration of contexts. For their function and for their intelligibility Internet-based texts are dependent upon the Internet and all its vagaries, from the constraints of its physical infrastructure to the menace of its many viruses, government spies, commercial trackers, cookies, and crawling bots, from the Babel babble of its multiple code languages to the competing visual and textual messages of its surface contents. How can works created for and within this highly provisional, seemingly immaterial, endlessly recombinatory context be read, watched, interacted with, participated in, understood, or indeed

commented upon in any other? The complex relations of materiality, atemporality, and multi-modality presented by digital writing demand consideration of the broadly defined digital text as an event transpiring in relation to and indivisible from the material, social, political, and embodied contexts within which it takes place. Context is everything, and in the event of a variable text, context is constantly changing.

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Author biography

JR Carpenter is a Canadian-born UK-based artist, writer, and researcher working in the intersecting fields of performance writing, digital literature, and media archaeology. She is a winner of the CBC Quebec Writing Competition (2003 & 2005), the QWF Carte Blanche Quebec Award (2008), the Expozine Alternative Press Award for Best English Book (2008), and the Dot Award for Digital Literature (2015). She lives in Cornwall. http://luckysoap.com.