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Digital poesis impulse: A methodology of creative coding with GPT as co-pilot

Abstract:

Any poem can be digitalised, but under what conditions might the poet desire a digital incarnation of their creative output? And for a writer with hobbyist coding skills, might ChatGPT be a suitable partner for creative coding? Faced with three digital poetry commissions and the terror of the blank screen, the author explores questions of poetry and desire, artificial intelligence and authorship, and the tools which enable her digital writing practice. As Irina Paperno (2004) notes, "scholars do not know what to do with diaries" (p. 565). Where the author's research asks what can be done with journals-as-archives the experimental, multimodal approach of digital poesis breaks open the notion that static containers such as memoir or biography are the best ways into literary archives. The author discovers the coding container as a playful place to enact modes of relationality between text and medium, mother and daughter, archive and archon. Much like Winnicott's (2005) mother-child play space enables an infant to test the limits of their inner world and external reality, a source-code editor offers unlimited combinatory potential for enacting a relational and material archival response. Through exploring practice-based research, this article tracks the methodology of the three digital poems from ideation to execution and publication, offering exegetical insights along with a detailed accounting of the tools and processes used in the making.

Biographical note:

Jenny Hedley is a PhD candidate at RMIT University whose writing appears in *Cordite*, *Crawlspace*, *Diagram*, *Mascara*, *Overland*, *Rabbit*, *The Suburban Review*, *TEXT*, *Westerly* and *Admissions: Voices in Mental Health*. Her digital poems "A Compendium of Failed Relationships" and "Titleist Pro V1" were each shortlisted for the Digital Innovation Prize at the Woollahra Digital Literary Awards. She lives on unceded Boon Wurrung land.

Keywords:

Digital poetry, creative coding, creative nonfiction, ChatGPT, archives

Introduction

In my search to discover *why* an author might want to make an interactive digital poem from a literary text I have found plenty of critical work on the origins of electronic literature, classifications of various types of e-lit (such as hypertextual, kinetic, interactive, text adventures, games, bots), analysis of how readers/users/players interact with digital poesis, as well as issues around preservation and archivisation. Seminal books like N Katherine Hayles's (2008) *Electronic Literature: New Horizons for the Literary* and Scott Rettberg's (2019) *Electronic Literature* survey the e-lit field, tracing what has been as well as what might be possible. However, beyond the histories, forms and futures of digital literature, I am curious to learn what inspires a digital poem and how it moves from inspiration to a fully realised version onscreen.

In my poetic practice, I take inspiration from affective responses to nature, relationality or archives. Sometimes thoughts pour out of me so fast I can only capture them in fragments in my journal; I transcribe these snippets with a word processor, editing and refining until I end up with something that is a poem because I say it is.

Compared to drafting traditional forms of poetry, digital poetics are highly time-consuming. Not only must one invest in digital upskilling, but they must also renew or expand that knowledge with the creation of each subsequent poem if they want to test the limits of their imagination. Coding is a field of constant innovation. It is an iterative practice that builds upon itself, akin to solving a logic puzzle: a single clue misinterpreted – a parenthesis out of place – and one risks hours of backtracking. For a creative coder, there may be less satisfaction in repeating an experiment than in expanding one's coding repertoire within a web-based space that offers unlimited combinatory potential. When teaching coding, I have observed the eureka moment when students finally get a block of code to execute and move on to the next challenge. The rewards for creative coding are mostly intrinsic: in my experience, Australian literary journals pay the same rate for a text-based poem as a digital poem. Coding poetry requires intentionality, sacrifice, and perseverance beyond what I have experienced writing "analogue" poetry.

There is little, if any, literature that explores the writer's impulse to migrate their work into the digital space, and this creative-critical investigation aims to address that. In 2023, I created three digital poems in response to three separate commissions; this paper will explore the creative impulse that sees a poem, born from diaristic archives, transmogrify into an interactive, digital space. Drawing upon my late mother's journal archives and bringing this poetic source material onto the digital playground allowed me to gestate in a space that mimicked the relationship I had lost. The notion of the coding container as reminiscent of the mother–child play space started to percolate as I questioned *why* as much as *how* these three digital commissions came to be. It is my hope that other creative writing practitioners will recognise the potential for scholarly inquiry into the digital poesis impulse and will contribute their own affective knowledge to the field.

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

2

The coding container as digital playground

In *Playing and Reality*, Winnicott writes, "It is creative apperception more than anything else that makes the individual feel that life is worth living" (2005, p. 87). Apperception is a deliberately conscious form of perceiving where one assimilates past experiences in the present. Winnicott argues that without methodical meaning-making, rigidly adhering to actual reality leads to "a sense of futility for the individual and is associated with the idea that nothing matters, and life is not worth living" (p. 87). The digital playground allows me to slough off the rules of external reality: within technological limits, any textual thing I can imagine, I can aim to create. Digital poetics falls under the category of electronic literature, or e-lit, a field which Katherine Hayles (2007) describes as "reflecting and enacting a new kind of subjectivity characterized [sic] by distributed cognition, networked agency that includes human and non-human actors, and fluid boundaries dispersed over actual and virtual locations" (Section 3, n.p.). While traditional print media carries the weight of established norms and traditions, and as e-lit rapidly evolves to keep pace with technological advances, there is room to exercise and perform a decentralised subjectivity – for example, where the author programs mathematically randomised events, the coding container is imbued with agency. This agency might even be triggered by the reader as agent, through actions such as clicks, text inputs or mouseovers.

As in Lévi-Strauss's (2021) concept of bricolage, I work with the materials which are to hand – archival documents, graphics, snippets of borrowed code – to make something new. My toolkit expands each time I extend my traditional writing practice into this multidisciplinary space. "Playing is doing", suggests Winnicott, and *doing* takes time (2005, p. 55). Where practice-led research situates my playtime (aka research) in the digital space, so much of the fun has to do with unexpected outcomes and iterative learning. When engaging in creative practice research, *doing* can resemble play; however, Barbara Bolt (2010) reminds us that the "double articulation between theory and practice" is key to practice-led research (p. 29). Bolt describes a relationship between theory and practice where each informs and emerges from the other. Coding as a practice emphasises such an iterative feedback loop. Within the digital playground, digital-poesis-as-research is a way for me to test the material and virtual limits of my subjective reality – more specifically, my creative writing practice – as it relates to the question of what can be done with journals-as-archives.

Winnicott names the mother-child relationship – which today we might extend more broadly to the parent-child relationship – as an infant's first playground: a *potential space* for testing a playful reality beyond either the inner world or external reality. I discover in an empty coding container a similar potentiality, where I might assemble a web-based tableau through trial and error. I can knit together a visual experience which reflects or distorts my inner thoughtscape: just as ChatGPT is infamous for its hallucinations (where it provides false answers that it believes to be true), I can rely on the combinatory power of JavaScript to program my web-based canvas to hallucinate alternate realities or speculative pasts. Winnicott states that the mother's capacity to play, to humour the infant's "*experience* of magical control", allows the infant to enjoy a magical sense of omnipotence (2005, p. 63). Creative coding similarly gifts

me that childlike sense of magic, as what I conceptualise materialises onscreen. Where Winnicott proposes that a child with a good enough provisional environment in their early years is able to deal with the shocking loss of omnipotence when they face objective reality, my attachments were never so secure. In a sense, the coding container acts as surrogate mother – or at least, a play space for me to reanimate our relationship through experimentation with her literary archives – while my research leads me again and again to the site of maternal loss. I can spend hundreds of hours coding, pushing past the frustrations of my own technological knowledge, owing to this sense of play; of magical control that helps me process objective reality.

A poet's desire is a poem's desire

In the field of digital poetics, play is queen. Ergodic literature calls for a non-trivial effort on the part of the reader as they navigate the text (Aarseth, 1997) – an interaction from the reader/viewer/player beyond moving eyeballs and temporal delays on page load. The reader, or player, upon encountering a digital poem, might ask questions like: What type of poem or game is this? How do I trigger the narrative to begin? Does this work have an ending? Is this a game, and can I win? Do I scroll, click or hover my mouse to activate elements? What does this digital entity want from me? The poet-designer must keep in mind the needs and expectations of the audience, anticipating the ways they might interact with the poem, even if just to subvert expectations. What type of browser will they be using? What type of device? How can I influence the user experience?

Such questions are already well-investigated. Moving beyond these questions of how to satisfy a reader's expectations and a browser's requirements, my research seeks an answer to this question which is difficult to articulate and answer: What is the poetic impulse that might inspire a poet to make a shift from a text-based poem to the mode of e-lit? A poem, after all, is latent with a poet's desire. I turn to poetry to try to give language to the unlanguageable, to distil big emotions into bite-size form, or as means of investigation or play. Behind every carefully selected word lies multitudes of meaning, open to interpretation and iteration. How might an artist recognise and realise this latent desire, if given the opportunity to publish their poetry as electronic literature? In observing my creative practice research, I notice myself projecting my desire onto a poem-object, similar to how a child regards their first "not-me" object, believing it to be quite a magical thing. Winnicott argues that the realm of illusion which is permitted to the infant and is inherent to creative arts becomes a "hallmark of madness" for the adult who "puts too powerful a claim on the credulity of others"; and yet, Winnicott offers that we might "share a respect for illusory experiences" (2005, p. 205). Michael Taussig (2011) exemplifies this respect for illusory experience in his writing on fieldwork diaries. Taussig questions whether the notebooks are magical because they serve a "role as a quasi-character" (p. 27), or if they only become magical in hindsight. Either way, he proposes that a notebook carries a fetishistic, "spiritual power" that makes you "its willing accomplice" (p. 105).

The notion that archives are agential is raised by Plath scholars Gail Crowther and Peter K. Steinberg (2017): "If we see that the archive can be a living, breathing, and moving 'thing',

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

4

then it grows and changes and always has a tale to tell" (p. 88). As I read through my late mother's journals, filled with diaristic reflections and creative writing, there is no handbook that tells me how to make something new out of a literary diary, so I determine methodologies through the act of creative production. Experimental interventions, both digital and analogue, are a way of testing new ways *into* journals-as-archives; a mixed-method approach that breaks apart the idea of memoir writing as a contained and static thing. The following methodological inquiry tracks the movement of archival source material, from historical document to new creative work; I aim to provide technological insight for other creative writer practitioners and/or academics who are drawn to experiment in the digital space. Where Scott Rettberg argues that "electronic literature and digital art serve as tutor texts for understanding effects of technological mediation on humanity" (2023, p. 12), I also believe that the humanities will help us understand the relationship between human evolution and artificial intelligence (AI) evolution.

What factors drive the digital poesis impulse?

Any poem can be *made* digital – forced into a digital space – but I wonder: isn't it better if a poem inspires its own digital incarnation? My creative practice research has located three main reasons why a poem might be chosen to undergo hours of programming for a digital transformation. I propose the following, non-exhaustive list as a place to start.

Firstly, where there is a story told in data

As a way of filtering unruly sets of information, a poet-programmer can group data into arrays set to populate specified text areas. This is an alternative to presenting data in list or tabular form, a way of filtering data to prevent overwhelm. When using JavaScript and interactive website features like dropdown menus or buttons that trigger new content to appear without a page refresh, a user might see only a select amount of content upon taking an action (such as clicking, hovering, selecting). For example, Hannah Jenkins's (2023) poem "Island Layer" recomposes itself every time a user clicks "Regenerate". The reformed stanzas and glyphs evoke world-building in Minecraft; although the possibilities are ultimately calculable, the potentialities verge on infinite. A poem which results from randomising data might offer unexpected meaning through juxtaposition and chance, surprising even the poet-programmer. Sometimes, a poem in data represents a politics, as in "A Compendium of Failed Relationships" (Hedley, 2021). This digital chapbook tells a story of intergenerational domestic violence through email and psychiatric records, found text, stalking logs and search history.

Secondly, to reflect the digital vernacular of modern life

The 21st century is dominated by screens; the syntax of screen-based communication differs across social media channels, instant and text messaging, and the notes we keep on our phones. We backup our chats, screenshot conversations that are timed to disappear and filter our language and appearance. A poem can be an extension of this ongoing digital conversation, calling upon elements such as text bubbles or emojis that pay homage to platforms that offered inspiration. It can be a nasty, mixed up, pastiche world, and digital chaos is one way to represent the non-hierarchal privileging of disparate source texts. One of my favourite textspeak poems

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

5

is Rae White's (2018) "what even r u?", which explores toxic online spaces where anonymous trolls attack people's gender identities. The formatting of White's poem inspired my digital poem "i'll <3 u when ur gone" (2022), which narrates a relationship breakdown through clickable text notifications, annotated notes and messages. Another poem which recreates the messaging space is Shastra Deo's (2020) spectral "Variations on the word ghost", an interactive digital poem that invites us to slide into the DMs of a ghostly entity – formerly "an executable program with a body" – and to navigate through an existential conversation via a series of multiple-choice text replies.

Thirdly, resulting from a poet's desire to experiment or play

There are infinite options for experimentation and play in digital poetics. A poem can make use of hyperlinks, as in early digital literature, or a combination of visual artefacts including video, animation, pop-up windows and emojis. In "AVENGE HER AT ALL COSTS", digital artist La Fielding (2023) invokes all these elements, creating a pastiche of 90s aesthetic content, complete with dot-matrix graphics and glowing text on black backgrounds. There are five initial points of entry which tendril out into cyberspace; each subsequent page inviting the user to "Go Home", an admonition common to the net but which, in this context, makes us question ideas around colonialism and occupation. Cam girl/gxrl and kink elements are juxtaposed with pop culture and decolonial theory; a bunny bashfully bats her doe-eyed lashes beneath the words "YOU TOUCH ME OR MY SISTERS W/O OUR CONSENT / I RUIN UR FKN LIFE". This playground of pixelated digital coding container, with its executable code, is a comparatively safe space to explore complex issues around social justice, decolonisation and sex work. In this work by La Fielding, the playfulness of high-contrast and neon colours subverts the seriousness of the content which addresses occupation, rebellion and resistance.

ChatGPT for coding: An ethical use-case

An in-depth discussion of the ethics of AI for text generation is beyond the scope of this article, whose methodology includes using ChatGPT as a coding assistant for the purposes of creative coding. In the three digital experiments which follow, I ask ChatGPT to help me write lines of HTML, CSS, JavaScript and P5.js code. Outside of this code, the textual content of each of the following poems are my own original literary texts, written without assistance from AI.

Usually, the first thing one learns as a professional web developer is how to search the internet for existing code to build upon: most coders no longer write from scratch. Markup, stylesheet and programming languages and their libraries, such as those I have mentioned, are inherently open standard or open source [1]. Tim John Berners-Lee (TimBL), who created the first web browser, founded the World Wide Web Consortium (WC3) in 1994 with the belief that the web should be freely available for anyone to use and extend (Mozilla, 2023). To this date, the WC3 remains the preeminent standards body for the web, operating on the principle that the web remain accessible, and patent- and royalty-free. Unlike the copyright protections afforded to literature, many forms of software and websites adopt the mode of *copyleft*. Copyleft is an open-source license that allows work to be modified and re-released, provided that the derivative work adopts the copyleft licensing of the original. This ensures that what was built

for the benefit of all will continue to operate in a gift economy without restrictions being imposed. In lieu of monetising open-source code, programmers gain notoriety and opportunity from what they freely contribute to the broader web culture. Drawing upon open-source code doesn't violate copyleft unless a person hijacks the code by limiting its permissions.

Proprietary or commercial code is different. The thing about proprietary code – unlike literature – is that it can be hidden to prevent it from being scraped for large-language-model training purposes. As much as there is valid outcry over the use of ChatGPT as a tool for generating literary texts (for example, because it trained on pirated books), I anticipate no similar furore from the programming world, where open-source is the driving ethos that encourages innovation for the benefit of all. In keeping with this ethos, all of the code that I have published as a result of my experiments creative coding with ChatGPT is available to view in my websites' source code and to download from my public GitHub repositories (Hedley, 2024). While my original poetic language is under copyright, my poems' code is free for others to use and modify.

Digital experiment #1: "Titleist Pro V1"

Environment:	Glitch.com
AI used:	ChatGPT 3.5
Design tools:	Adobe Fresco, Illustrator and Photoshop; p5.js library for animation
Hours spent:	25

In early 2023, I was commissioned to code a digital poem for Crawlspace, to be launched at the Emerging Writer's Festival in June. The guidelines were unrestrictive, aside from the request that I code on Glitch.com, a user-friendly coding platform that enables collaboration. Crawlspace co-editors Rory Green and Hannah Jenkins welcomed "any form of writing or visual/sonic art, as long as it uniquely requires a digital publishing environment … and where we can host all elements of the piece ourselves (so no external APIs or links to files in the piece)" (Personal correspondence, 2023).

At the time, I was thinking about why I hate golf. Half of the journals my mother left me are filled with it: hand-drawn diagrams of holes, post-lesson notes on swings, plans for her golf manuscript *Slices*, endless ruminations on women golf heroes, laments about being a woman in a man's world. Mother and I were always close, but I only ever trailed her to the course to eat up her minimum monthly spend at the country club where she had fought to become the first woman member. Her high school teaching salary, however, couldn't sustain the dues and the membership soon lapsed. She relied on others for access to exclusive clubs whose greens served as a siren call to her swing-hungry self. I resented the hold that golf had on my mother, who loved it so much and seemed to receive so little in return. Who'd informally coach the men in her foursomes, men whose thanks would involve seedy insinuations about cosying on up to the hole or attempts at forced inebriation. My mother's mother taught her to be a so-called "good girl", and so she tittered along with the offensive men. That was the price she'd pay:

swallowing her anger for a shot at pastures that were literally greener, where rolling hills undulated with the glossy sheen of manicured grass grown from patented seed.

Her golf book couldn't find traction with publishers in the early 2000s. Around this same time, I was trying to find a sponsor for my world champion pro surfer friend, and I will never forget the sports sunglasses manufacturer who refused, laughing her off as a "dykey chick". Even today, when women make up 77% of the US publishing workforce, the median annual compensation for women is $19,000 US below men's (Milliot, 2023). Additionally, traditional publishing books written by women are priced 45% below books by men (Weinberg & Kapelner, 2018). The patriarchal culture affecting both sports and the publishing world, coupled with my sensitivity over being excluded from the most-loved part of my mother's life, led me to think of her golf journals as extraneous to my creative practice. I tossed a notebook in which she had sketched the layout of 18 holes, then guiltily retrieved it from the recycling. When I sorted the journals, I had retrieved from California into suitcases (carry-on versus checked luggage), I relegated the golf journals to the airline's cargo hold and almost felt relieved when the airline lost my checked luggage. But two weeks later, my checked suitcases showed up in Melbourne, wheels missing, and corners crushed in. My mother's love of golf, in what feels like an ironic, ghostly infiltration of my writing process, disguised itself as a golden nugget in my unconscious. I type GOLF and it comes out as GOLD – although the proximity of the letters on the keyboard indicates as much a digital slip as a Freudian slip. When there appears to be no way of writing around this thing, I feel I must find a way to inhabit this terrain of my arch-nemesis, to understand the allure it held for my mother and the depths of my disdain. Bogey for me!

One night, after reading a script by Bella Battersby (2023) for a web series, *Roaches*, where one of the characters is an embodied blister pack of antidepressants, I came to the realisation that I could destabilise my relationship with golf by writing from the perspective of a golf ball. The voice behind my poem "Titleist Pro V1" – named after the balls that my father whacks – is an irate golf ball acting as class critic. I was not happy with the analogue version of the poem, however. It had too many stanzas and was too theatrical and niche – all of which made it a candidate for transference into the digital space.

I emailed my tentative idea to Crawlspace co-editors Rory Green and Hannah Jenkins: "I'm picturing a caustic golf ball (with glasses, arms and legs) with a thought bubble containing the most bitter poem issued by Golf Ball as Class Critic." In April I met with Green virtually to explain the story behind the poem: how half of my mother's journals revolve around golf, how much I hate golf, how the only way I could write about golf was to go *into* the golf ball. I knew that I wanted golf balls to rain down on the page, and I could picture the golf ball character moving, animated in GIF format. My problem was what to do with the words. There were too many stanzas to fit into one cartoon thought bubble. Would the poem appear as if typewritten? Would the text scroll or regenerate? Something didn't feel right – my proposed container for the words felt too static and the motions (typewriting, scrolling) too forced. My desire for the golf ball to have a digital presence, material embodiment and animation made sense, even as the question of what to do with the stanzas confounded me. As for the rain of golf balls, Green

suggested instead that I borrow from existing open source p5.js code (which is beginner friendly) to animate the balls in ping-pong motion.

Green asked if the poem had a timeline, (a beginning and an end) and I said yes, although I hadn't yet realised the temporality. Even as the digital space affords detemporalisation, it is still "possible to *perform* time" (Bouchardon & Fülöp, 2022, p. 2). Green followed up with sketches suggesting how the stanzas might pop up on the page, one after the other, each triggered by mouse click (a generous editor is a creative coder's best friend). Here, the temporality "intertwines the activity of the computer with that of the reader-player-user" (p. 2). As each subsequent stanza crowds the page, every successive click would also trigger a new golf ball to ping-pong across the page, leading to more congestion and chaos. The fury of the golf ball would be unleashed.

Excited that the poem's form would satisfy my desire for my Golf Ball as Class Critic, I spent the afternoon preparing visual elements for the page. I signed up for a limited trial with iStock to download vector graphics (golf balls, cartoon thought bubbles, faces, arms and legs), which I edited in InDesign. I collaged these into a mood board to better map the end product.

Faced with a blank coding container on Glitch.com, I prompted GPT-3.5 for the first time:

> I want code for a webpage that has a gif in the lower left corner, 1/6th the size of the screen. On page load there should be one popup window to the right of the image, approximately 1/8th the size of the screen. On each mouse click another window should appear randomly on the page, until there are 8 popups total. Write me the code using HTML CSS and JS.

ChatGPT responded with basic HTML, CSS and JavaScript, as instructed. We were off to a good start, but my next sets of instruction ended up lodging us in a loop of GPT-induced hallucination. GPT-4 is known to hallucinate – to produce false or nonsensical information in response to chat prompts (OpenAI, 2023c). Aside from producing buggy code, OpenAI acknowledges that other known faults include societal biases, harmful advice and disinformation. Scott Rettberg notes that "the trouble with LLM-based AI is the trouble with humans" because they "pick up on the biases inherent in human language and replicate those biases in the chatbot's funhouse mirror" (2023, p. 12).

I asked GPT to allow me to add lineated text to each of the popup windows, to style the popups as comic thought bubbles and to align them in a particular way. The code became unruly, so I asked GPT to consolidate it. I wrote, "Wow, aren't you so clever! Thanks :)" – but I would not have been so enthusiastic if I'd known that I was only 1/11th of the way through our coding journey (evidenced by us being on page ten out of 110 pages of transcribed chat). I'm reminded of what OpenAI's Andrej Karpathy (2023) said about GPT, that if it has sampled a poor-quality token, it "can go down … a blind alley in terms of reasoning"; that, unlike humans, it can't recover from bad tokens so it "continue[s] the sequence even if they know that this sequence is not going to work out".

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

9

We hit a wall. I didn't have my enjambments. I've run into this problem many times when coding poems. Common practice has it that you add "\n" as an escape character to create line breaks. Tried that, didn't work. Common practice also has it that you can hard code line breaks using backticks (`) to enclose your text – something known as a template literal. Tried that, didn't work. When writing code, line breaks serve a different function than in poetry. Glitch.com even has a function called "Prettier" that rearranges tabs and line breaks to make the code easier to read. I recall a solution for poetic line breaks that had to do with parent-child relationships, but understanding parent-child relationships eludes me both in practice and in code. I tried to rephrase my request in so many ways, as per this documentary poem:

> When I use \n for line breaks
> I get a parsing error. What am I
> doing wrong here? Tell me
> what I am doing wrong? I want to
>
> achieve goals. I'm having trouble
> with template literals. They appear
> all on one line. How can I fix
> var popupText. Sorry, but
>
> you haven't included \n line breaks
> in the code snippet. Please
> clarify. Let's try again. That
> code looks different from what
>
> you wrote before I asked
> you. Sorry, but you didn't
> finish writing the code.
> Thank you but every time
>
> you reply, the code changes.
> You sent me this but didn't
> finish writing the code. Can you
> finish this please:

Here, I've automatically adopted the polite, sanitised voice of my collaborator: GPT. Am I slipping into the territory of what John Cayley might call a "text-degraded pseudo-language" (2023, p. 19)? I'm reminded of an internet meme. In a post-human world, there are several robots chatting over a human who cowers in a little ball. One of the robots says, "This one was polite. I think we should keep it". Maybe being polite to the machine is an all-too-human attempt at manipulation. Or maybe in being polite, I am also teaching it to be polite. It was probably programmed to be polite and I am maintaining a sense of decorum.

I temporarily abandoned GPT it in favour of InDesign, where I placed my ten stanzas into cartoon thought bubbles using Stan Lee font and exported them images for web use. I threw out the old code and started over, prompting GPT:

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

10

I want code for a webpage with a container with dimensions 1920x1080px. Everything on the page goes inside that container, including a 1920x1080px background image. There is a gif in the lower left corner 400x500px wide, with 60px padding all sides. On click there should be one 400x250px popup image whose bottom left corner aligns with the top right corner of the gif. On second click, a second popup image should appear below the first. On third click, a third popup image should appear to the right of that one. On fourth click, a popup image should appear 500px above that. On each subsequent click another image should appear randomly on the page, until there are 10 popups total. All of the popup images are 400px wide x 250px tall, have transparent backgrounds, and should appear in order. Write me the code using HTML CSS and JS.

GPT sent me truncated non-solution after truncated non-solution. If I were to model a poem based on GPT's replies, it would look like this:

Sure, here's the complete
function. Apologies for the
confusion, here's the complete
code with HTML and CSS:

I apologize for the confusion.
Here's a complete code based on
your requirements. I apologize
for the confusion earlier. Here's

the corrected code based on
your previous question. Apologies
for the inconvenience. Here is the
full code. Certainly, here is the code.

After GPT finally scripted the code, I lost time over file naming conventions because of how Glitch.com assigns images unwieldly URLs instead of storing them sensibly in an image folder. Since, as a human, I cannot fathom why Glitch does this, understanding appeared to exceed GPT's logic. I reframed my question multiple times to get a workable solution: "precise 'prompt engineering' is a *writing* skill" (Rettberg, 2023, p. 12).

I ran into major hurdles when I asked GPT to add a sketch.js file to the webpage, to house the p5.js animation "Click bouncing balls", which I borrowed from a [p5.js library](#) (xm663@nyu.edu, n.d.). Neither GPT nor I could figure out why my code wouldn't work. Nineteen pages of transcribed chat later, with GPT presenting the same non-solution in myriad ways, I finally received a simple code snippet that worked when pasted into the HTML.

The p5.js animation trajectory overwrote each animated frame with the same colour as the background; since my background had many moving parts it required a different solution. I asked GPT to make the canvas behind the bouncing balls invisible instead of grey, so that I could see all of the other elements (animated golf ball, stanzas, background image). It took 42 transcribed pages of chat to make this happen. The problem was that by turning the animation

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

11

canvas transparent, each animated ball left behind ghost trails of hundreds and thousands of balls, quickly obscuring the screen. I searched the web for alternate p5.js animations, believing that my experiment with GPT had reached its limits.
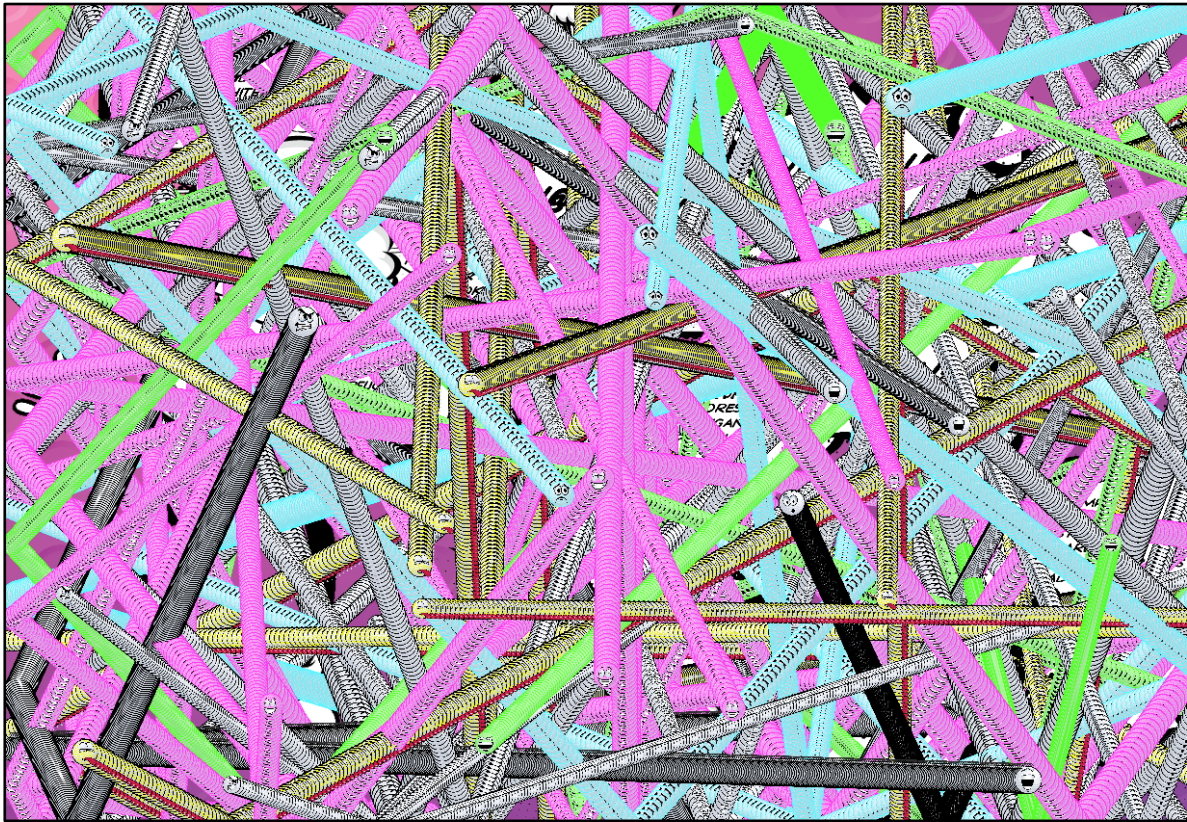

Figure 1: "Titleist Pro V1" WIP - Golf ball ghost trails

I lamented to GPT, after receiving the umpteenth unworkable code snippet, "But I also need all of my popup images to show and not be erased". I imagine that GPT's AI heard the anguish behind my words, although I recognise this as a human tendency to anthropomorphise. This woeful prompt, as opposed to all the more technically worded prompts, succeeded. GPT presented a solution:

> If you want to keep some elements of your sketch visible while also clearing the ball's previous positions, you can create a separate buffer for the balls and draw them on top of your main canvas. (OpenAI, 2023a)

With only a few quick modifications – including some where I manually rewrote code instead of implementing ChatGPT's suggestions and others where I implemented GPT's solutions without full comprehension – I had a working version of my poem. Satisfied that the digital incarnation fulfilled my desire for my poem to be in-your-face annoying while ranting against golf's sexism and classism, my final tweaks to the poem were minor. Mostly, I returned to the Adobe Creative Suite to jazz up my graphics.

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

12

What resulted from this experiment was a willingness to write *into* a thing, to step into the positionality of my hate-object to better understand my mother's relationship to the sport she loved. The only way for the reader/player to get through the stanzas is to submit to complete chaos, since every click triggers both a stanza and a frenzied bouncing ball. I wanted the hectic sensation to mimic the emotional unrest I feel when I think about golf. Paradoxically, it was a joy to create this poem. When people tell me they didn't know a poem could *look like that*, it encourages me to continue to test *what a poem should look like*.
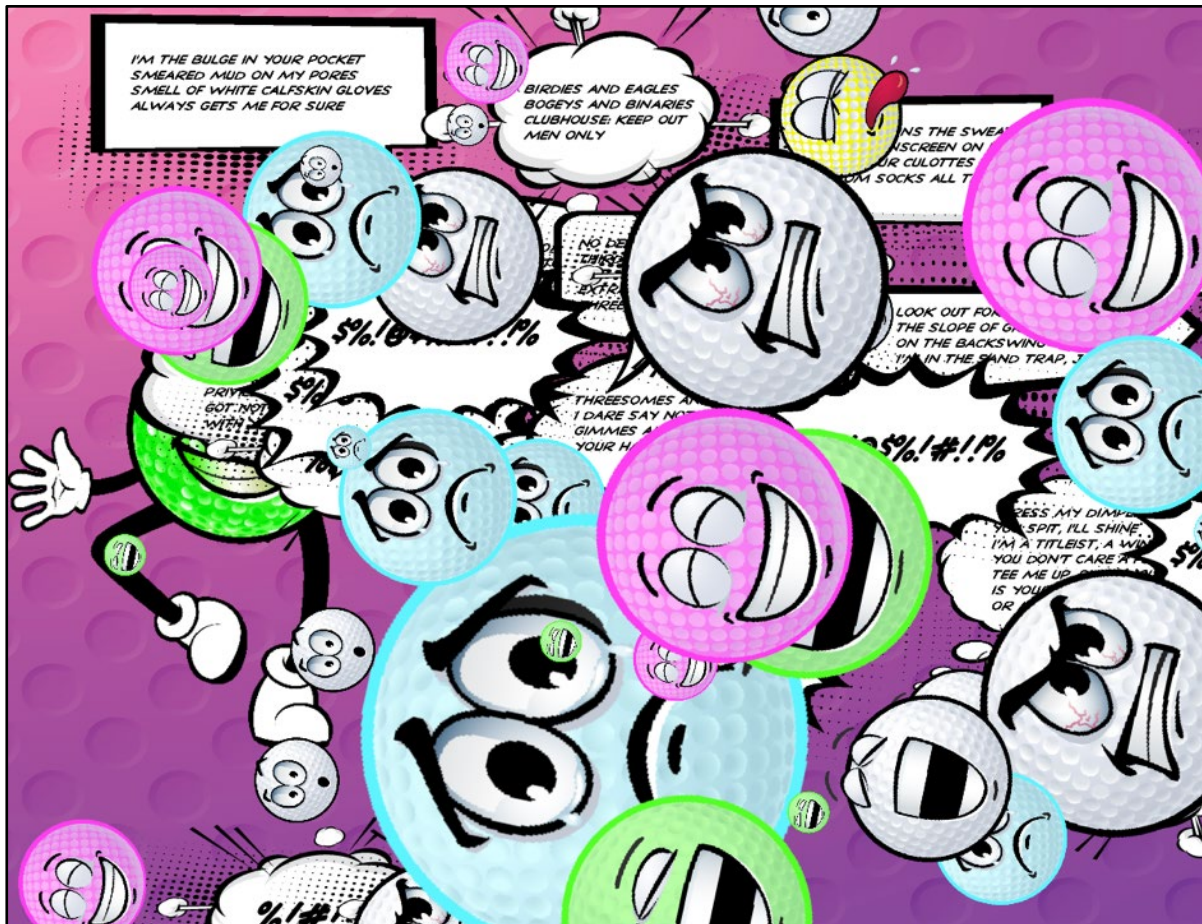

Figure 2: "Titleist Pro v1" screenshot

Digital experiment #2: "The Scream"

Environment: Visual Studio Code
AI used: Adobe Firefly, GPT-4
Design tools: Adobe Fresco, Adobe Illustrator, p5.js library for animation
Hours spent: 20 (including drawing)

When deputy editor Erin McFadyen commissioned a new digital work to celebrate *The Suburban Review's* tenth year in publication, the scope was open. My poem would be published in an inline frame (iframe) on WordPress and was to be delivered as a zipped folder with internal linking. Each time I am tasked with creating a digital work, my desire is to produce something unexpected or which demands a skill outside of my comfort zone. For this

commission, my practice-based research continued to ask what can be done with journals-as-archives. I turned to a line from my late mother's journals which haunted me: "Jenny screams in tree". I had climbed and screamed in many trees, taken comfort in their shade. But lacking context for this particular scream, I decided to *go into* the gap to play with speculative reimagining. In absence of memory, I considered what could have been:

> I like to think that within my mother's journals I might discover her howl and feed it to the wind. Instead, I'm confronted by my own scream. My mother watched me scream into a tree. She saw my wail of suffering penetrate branches half-dressed with autumn leaves past peeling bark and love hearts carved into trunk, a yowl filtered down into earth through gnarled roots, a cry of soul pain raced past rhinoceros beetles and worker ants headed toward their queen to be composted in terrestrial interstitial spaces as fuel for green shoot. Mother would not scream alongside me. Neither would she silence me. (Hedley, 2023b)

The Suburban Review had just published KAZKOM's (2023) "Spicy Lemon Sour", a delightful digital comic about queer dating whose panels are animated GIFs. I had always wanted to try illustration, so I broke down my prose poem into stanzas and mapped out seven illustrative scenes plus a title card. In *Are You My Mother?*, Alison Bechdel (2012) documents the process of photographing herself to use as a model, but the scenes in my poem were too fantastical to stage in real life. To create models for my drawings, I turned to Adobe Firefly, which like DALL-E or Midjourney is a text-to-image model that turns language prompts into visual renderings.

Adobe reports that Firefly "is trained on Adobe Stock images, openly licensed content, and public domain content where copyright has expired" (Rao, 2023). I appreciate that Adobe is transparent about their training dataset and implements rigorous testing to mitigate harmful outputs, whereas other image generators such as Midjourney have come under fire for producing derivative images that can be used as deep fakes (Finlayson, 2022). I prompted Firefly: "black and white illustration girl screams into tree" and refreshed the content until I found an image I was happy with, then issued prompts for each of my frames. John Cayley describes such user-prompted image generation as "an actual *(e)writing of the image*, in which the 'e' of the writing is performed by the transformer" (2023, p. 2). Cayley argues that image generation deserves the title of e-literature, but even though Adobe provides license for student/research use, I did not feel comfortable using the images as is. Instead, I imported them into Adobe Fresco on my iPad and used a digital pencil to recreate the images in a unified style, using favourited brush strokes plus watercolour. Each of these digital illustrations took around two hours to draw, and for the final panel I collaged all of the images together. I imported my illustrations into Illustrator and again added the Stan Lee font.

I opened a new project space on my desktop using Visual Studio Code. Visual Studio Code's IntelliSense provides out-of-the-box code completion through AI detection and sets up a basic HTML page with a single exclamation point. IntelliSense's code hinting can be enhanced by using the GitHub Copilot extension, which I installed but did not rely on. GPT-4 and I were off to a bad start, so it was fortunate that the coding for this project was simpler than the last.

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

14

Additionally, in May 2023 GPT introduced a button that says "Continue generating" so its responses were no longer abrupt. I discovered Beyond Fireship's (2022) scroll animation code on YouTube and fed it to GPT. All that I required to complete my digital poem was a series of eight tiles with animated hover effects on mouseover, plus p5.js Perlin noise animation in the background. GPT and I went back and forth for hours before succeeding. I asked GPT-4 to summarise our interaction and it concluded:

> The final responses addressed the specific requests, providing corrected HTML and CSS for the hover effect and incorporating p5.js for a Perlin noise animation as a background. The conversation aimed to be iterative, addressing issues as they arose. (OpenAI, 2023b)

In addition to taking on a new artistic medium, this project taught me to be more flexible as a writer, and to allow fiction to permeate my nonfiction practice. "The Scream" helps me think about secrets in relationships, what is said and unsaid: the counter side of each panel forms a hidden critical meta narrative that appears only on mouse hover. I perceived no difference in the quality of responses between the paid and free versions of GPT with regards to coding. Both models had obviously consumed bad tokens, which led to buggy code. Neither offered easy solutions: each required an iterative conversation between prompter and AI.

Figure 3: The last panel from "The Scream"

Digital experiment #3: "A Lonely Girl Phenomenology"

Environment: Glitch.com

AI used: ChatGPT 3.5

Design tools: Adobe Illustrator and Photoshop; Adobe Stock templates; p5.js library for animation

Hours spent: 30 (including writing, editing and coding; not including research)

For my third digital commission I once again had the pleasure of working with Rory Green – this time in their capacity as Games Literature Editor at *Cordite Poetry Review*. They invited me to respond by essay to a digital artist or set of pieces; to weave a thread or investigate something that dovetails with my practice-based research. I had been obsessively reading up on Chris Kraus's (2006) *I Love Dick* and Audrey Wollen's (qtd. in Salek, 2014) Sad Girl Theory, and was considering how the diary form might be the ideal repository for Sad and Lonely Girl literature.

In my journal (see Figure 4), I ideated the critical section (left page), which then fed into a list of possible artefacts (right page). The interesting part of this process was the coming together of the essay and the digital form at the same time: neither could have been produced without the other. This was my first experience combining essay with digital, and I was impressed by how each medium enriches and speaks to the other, creating a back-and-forth movement between texts, with each responding and unfurling in relation to the other in real time. It was a great way to understand, again, the relationship between digital media and critical or autotheory.
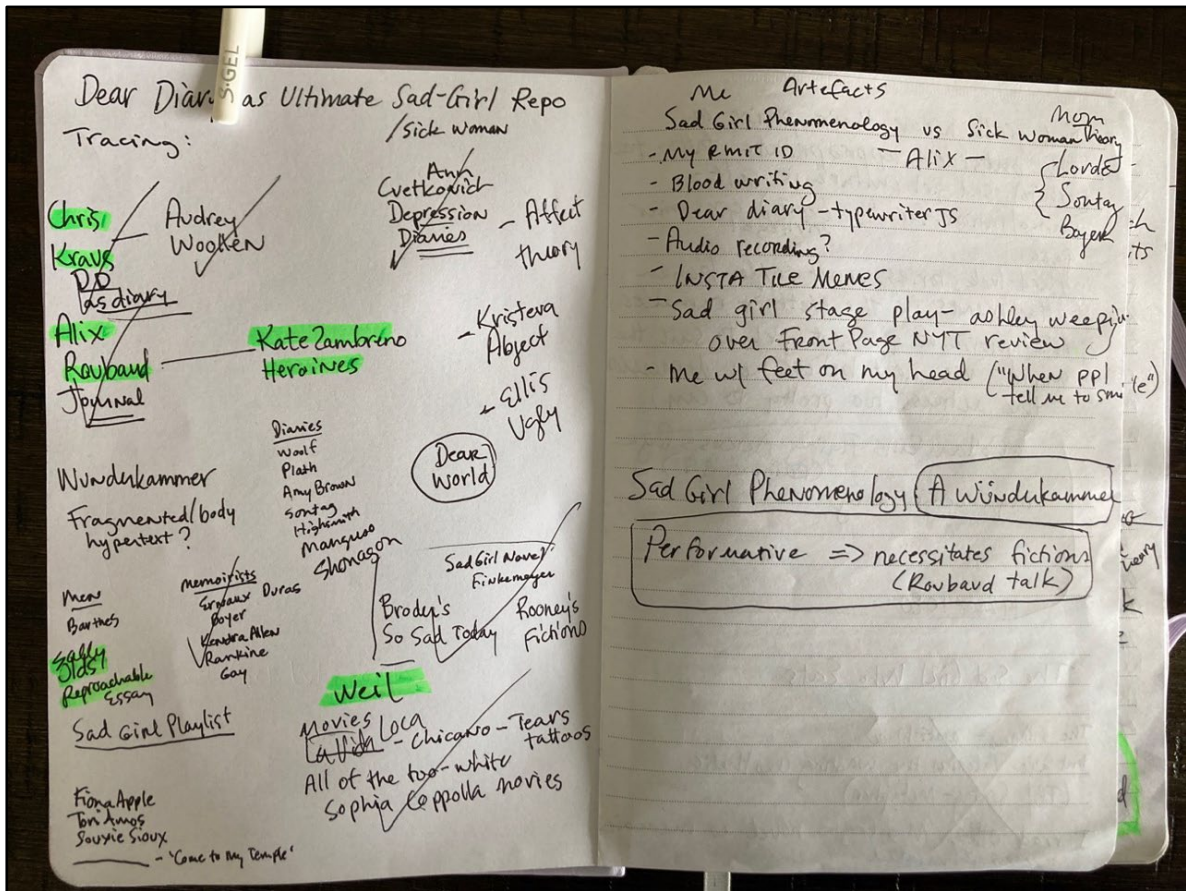

Figure 4: Ideating "A Lonely Girl Phenomenology"

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

16

Based on my previous experiments, I have learnt that the more details I take care of on the graphic design side, and the more I plan the precise location of visual artefacts, the less coding I will have to do. Taking stock of my list of artefacts, I placed photographs, scans and stock vector graphics into a file folder. I used this source material to mock up a design in Illustration. In my collage – especially in the background image – there are layers and layers of sedimented meaning. I found that creating the visuals – bright and cheerful, poking fun at my own sadness – influenced my voice. The essay begins:

> I am following a lineage of sad and lonely girls, women who diarised or even fictionalised their sadness, knowing that their words would be scorned by the men they loved, men whose so-called serious efforts were lauded and canonised, while their own projects were dismissed as personal, histrionic. I am infatuated with the hysterical, the abject, the ugly: I want to gaze upon my literary reflection. I am a Sad Girl, a Lonely Girl, not beyond reproach. (Hedley, 2024)

Because of my preparation both in Illustrator, and in Photoshop where I created GIFs, this was the easiest project to code. The resulting interactive digital collage incorporates scans from my diaries and my mother's diaries as well as archival objects and photos. In the interest of keeping the project lightweight in terms of download speeds, I had to sacrifice image quality in some instances. However, I am interested in the way that illegible artefacts speak to my tacit knowledge as a creator, and how the very fact of their presence informs the overall aesthetic of the piece without dominating. Even the eight social media tiles I created to *brand* Lonely Girl Phenomenology are not perfectly legible.

When I designed these branding tiles I had just attended an RMIT non/fictionLab workshop: "Maverick Methods: Workshop as Interactive-Mediated-Performance (WIMP) reimagined as Creative-Resistance-As-Political-Practice (CRAPP) with Multimedia Interventions And So Many Acronyms (MIASMA) with The Jolly Good Fellows (JGFs, aka Peta Murray and Stayci Taylor)". Murray and Taylor (2023) led us through an exercise in which we "lol'd" our PhDs, which positioned me to *lol* or queer a stock-standard Adobe branding kit to hilarious effect. As I write through difficult topics, I find joy in disruption and subversion, which fires my creative practice.

As far as GPT goes, I dropped the pleasantries and became more demanding. I kept things simple, fine-tuning my prompt:

> make me a responsive "lonely girl phenomenology" with a background img; plus a div on the left of the page to hold a 779x877px background image that cycles through 8 images on click; plus another div off to the right of that that is 650x500px that cycles through 4 images on click

After this, I instructed GPT to add p5.js animation code to drop dollars and emojis on each mouse click. Again, the code didn't work when I placed it in its own script.js file, so I placed it in the HTML. GPT gave me dozens of pages of bad code that I had to troubleshoot, talking

it through the errors I was able to perceive. At this stage, I felt like a human fine-tuner. It took an extreme amount of effort to achieve any worthy results. Finally, I asked GPT to summarise how I could do better, and it told me, in part: "Improved communication and a clearer articulation of the desired behavior [sic] would facilitate a more accurate and efficient development process" (OpenAI, 2023a).

Figure 5: "A Lonely Girl Phenomenology" screenshot

Reflecting on method

For each of these three digital commissions, I had to teach myself new technologies, expanding my knowledge, for example, of p5.js animation libraries, learning how to draw on an iPad using Adobe Fresco, improving my graphic design skills across the Adobe suite, writing code on Glitch.com and Visual Studio Code and troubleshooting broken code using GPT-3.5 and -4. I often ran into frustrations and challenges, either due to the limits of technology or because of my digital literacy, which provoked me to seek innovative solutions, working with whatever materials I had at hand. This type of upskilling and problem-solving is transferable to my analogue creative practice: I can look at obstructions as opportunities, rethinking the usual ways of doing things.

Coding is an iterative process, akin to writing's editing process. Each of these digital experiments began with sketches or a mood board, and I wonder if this technique might also assist a text-based practice. Digital writing remains a burgeoning field of possibility with grand potential for exploration. The digital space is vital to my multi-modal practice because it offers me different ways to sort and present archival data, and I am afforded tactile control over the

presentation of ergodic material which invites readers to play. This interactivity speaks to the not-dead feeling-space I am aiming to create by reanimating journals-as-archives into live material that holds currency.

Coding is no longer purely the domain of the technophile. Bringing AI technology into my practical toolkit has allowed me to code beyond my basic skill level. During my experiments, I repeatedly asked GPT to explain blocks of code to me or to break down the purpose of the code step-by-step. This is where it excelled and was most reliable. Having GPT as my helper gave me reassurance and confidence, as if it were my tutor. But no tutor is infallible and the onus to maintain an ethical practice remains with the creative practitioner. Large language models should not be relied upon to supplant one's creative outputs but rather to enhance or enliven them in new ways. We must not only keep in mind the fact that some LLMs have trained on pirated material that is under copyright, but also that in order to generate innovative results from an LLM, you must find a way to communicate to it your unique creative vision. It is one thing to mimic what has been done a thousand times before; it is quite another thing to subvert established technological norms and make innovative and artistic use of web space.

Even as I edit this article, an invitation from Dora AI Beta lands in my inbox. Dora AI is a website generator capable of producing complex 3D and scrolling animations based upon natural language prompting and a no-code editor. AI is moving at such great speed, and with lower barriers to entry, that to ignore the creative potential is to miss out on the possibilities for extending creative writing into a multimodal space. With each subsequent iteration of these AI technologies, it becomes easier to materially generate that which occupies the realm of our imagination.

Notes
[1] Stylesheet is a language just as markup is a language. CSS (Cascading Stylesheets) is an example of a stylesheet.

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TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

20

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Acknowledgements

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

21

TEXT Vol 28 No 1 April 2024
Managing Editors: Julienne van Loon, Ross Watkins
Editors: Julienne van Loon, Ross Watkins and Shady Cosgrove

22