

Christian Bök's Xenotext Experiment, Conceptual Writing and the Subject-of-No- Subjectivity: "Pink Faeries and Gaudy Baubles"

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Keywords

Xenotext Experiment; conceptual writing; feminist science and technology studies; subject-of-no-subjectivity; avant-garde poetics

Abstract

Despite the wide impact of transdisciplinary scholarship that has theorised the interconnectedness of literature and science not least within the pages of this journal¹, this article argues that the Canadian poet Christian Bök's Xenotext Experiment² (and conceptual writing in general) reproduces historical epistemologies (including positivism and relativism)

¹ Melissa Littlefield and Rajani Sudan, "Editorial Statement", Configurations, 20:3 (2012): pp. 209–212.

² Christian Bök, "The Xenotext Experiment", SCRIPT-Ed 5:2 (2008): pp. 227-231.

that rely on the presumption of disciplinary autonomy. In the sciences, these epistemologies are connected to sociocultural and economic power, extreme resistance to criticality, and the production of normative subject and object positions (including what I term the subject-of-no-subjectivity on the one hand; and the passive, inert object of scientific positivism on the other). The article explores the implications, problems, and affordances of reproducing historical epistemologies in conceptual writing. The key argument is that the reproduction of historical epistemologies in the disciplinary context of literature yields avant-garde credentials, marginalising often content-led experimental works that might take as their theme experience and subjective difference (race, class, gender, sexuality, able-bodiedness). This way, contemporary conceptual writing practices perpetuate the normativity and exclusiveness it inherited from historical avant-garde literature³.

Introduction

The last decade has seen a proliferation of engagements from the humanities with the natural sciences including within affect studies, the new biologies or biosocialities, the new materialisms, feminist science and technology studies, and within literature. These interdisciplinary engagements have taken a variety of shapes ranging from “critical friendship”⁴, to “ebullience towards science”⁵, to the unimaginative or uncritical borrowing of isolated scientific concepts in order to bolster or authenticate a theoretical argument, without

³ See Ellen Friedman and Miriam Fuchs, Breaking The Sequence: Women’s Experimental Fiction (New Jersey: Princeton University Press, 1989), in which the authors argued that whilst the avant-garde and feminist projects appear to share an opposition to established forms and forces, and the pursuit to modify or overturn existing modes of representation and to effect radical change, these links have not been mined for their creative and critical potential.

⁴ Felicity Callard & Des Fitzgerald, Rethinking Interdisciplinarity across the Social Sciences and Neurosciences (New York/Basingstoke: Palgrave MacMillan, 2015).

⁵ Nikolas Rose & Joelle M. Abi-Rached, Neuro: The New Brain Sciences and the Management of the Mind. (New Jersey: Princeton University Press, 2013).

necessarily taking into account the controversies, critiques and nuances of debate in the sciences themselves⁶. Arguably an investment in the newness of these debates has led to a tendency to disregard longstanding histories of engagement that have examined the mutual imbrications of the humanities and the sciences⁷ in journals including Configurations.

In this context, the Canadian experimental poet Christian Bök has recently issued the provocation that science has replaced literature as the field generating the most imaginative narratives⁸. Bök's provocation is linked to a wider presumption within avant-garde poetry that it is impossible to generate new forms of writing since everything has already been done. According to these views, the potential for radical literary innovation has been exhausted, and precedent avant-gardes, specifically the language poets⁹, have "pushed poetry as far as poetry on the page can go"¹⁰. The belief that other disciplines including the sciences have the creative edge over poetry has reinvigorated an orientation towards interdisciplinary in contemporary avant-garde poetics (as well as strategic 'uncreativity', which I will return to later). There is an interest in producing literature beyond the page, i.e. texts "that might easily be mistaken for an interactive sculpture, a mechanized appliance, or even an artificial ecosystem"¹¹. Accordingly, Bök's Xenotext Experiment extends poetry into biochemistry. To

⁶ Felicity Callard and Constantina Papoulias, "Biology's Gift: Interrogating the Turn to Affect", Body & Society 16 (1) (2010): pp. 29-56. Ruth Leys, "The Turn to Affect: A Critique", Critical Inquiry, Vol. 37, No. 3 (Spring 2011): pp. 434-472.

⁷ Sara Ahmed "Some Preliminary Remarks on the Founding Gestures of the "New Materialism"", European Journal of Women's Studies 15:1 (2008): pp. 23-39; also Lisa Blackman "The challenges of new biopsychosocialities: hearing voices, trauma, epigenetics and mediated perception", The Sociological Review Monographs, 64:1 (2016): pp. 256-273.

⁸ Christian Bök, The Xenotext (A Progress Report), Lecture presented at Simon Fraser University, Canada, 25 January 2013, <https://vimeo.com/58653647>

⁹ Language poetry, L=A=N=G=U=A=G=E poetry or language writing is an avant-garde poetry movement that emerged in the late 1960s and early 1970s in the US.

¹⁰ For example, Anders Lundberg et al. (eds.) "After Language Poetry: 10 Statements", OEI 7, <http://www.ubu.com/papers/oei/index.html>

¹¹ See Christian Bök, "After Language Poetry". In Anders Lundberg et al. (eds.) OEI 7 After Language Poetry: 10 Statements (see above n. 10). The Canadian experimental poet Steve McCaffery terms approaches that extend literature towards other domains 'parapoetic'. See Steve McCaffery, The Darkness of the Present: Poetics, Anachronism and the Anomaly

summarise, Bök encoded a poem (called 'Orpheus') into the genome of a microbe so that, in reply, the cell builds a protein that encodes yet another poem (called 'Eurydice'). But what kind of science has replaced literature as the field allegedly generating the most imaginative narratives in these contexts? This article explores the particular version of interdisciplinarity staged in Christian Bök's Xenotext Experiment and conceptual writing more generally. Extending the proliferating feminist, queer and postcolonial critiques¹² of avant-garde literature and its post-identity politics, I will draw attention to the normative epistemologies reproduced within the Xenotext Experiment and conceptual writing, which underpin normative subject positions and social inequality.

I begin by introducing the project as represented by Bök and the media, including some of its reception, the debates it engendered and its human and nonhuman key players. To anticipate, the particular phenomena, subjects, and objects produced within the Xenotext Experiment¹³ include the unmarked, maverick experimental subject, polymath and avant-garde poet Christian Bök; two unique and essential poems called 'Orpheus' and 'Eurydice'; and a biologically determinist, feminine microbe. I will proceed to explore what some of the problems and affordances of these subject and object position might be in the context of contemporary avant-garde poetics.

The Xenotext Experiment: Bök, polymath

(Tuscaloosa: The University of Alabama Press, 2013).

¹² For example, Cathy Park Hong, "There's a New Movement in American Poetry and It's Not Kenneth Goldsmith", in New Republic, 1 October 2015, <https://newrepublic.com/article/122985/new-movement-american-poetry-not-kenneth-goldsmith>. Also Juliana Spahr and Stephanie Young, "foulipo". Talk for CalArts Noulipo conference 28-29 October 2005, <http://www.drunkenboat.com/db8/oulipo/feature-oulipo/essays/spahr-young/foulipo.html>.

¹³ Subsequently referenced in the text as XE.

With articles in The Guardian¹⁴ and the New Scientist¹⁵, international lecture tours, and most recently a book of related poetry¹⁶, the XE attracts a fair amount of attention within and beyond the field of experimental literature. On 28th April 2011, the BBC science pages reported that Christian Bök successfully embedded a poem into the genetic sequence of a microorganism¹⁷. Further, the poet engineered the gene in such a way that it prompts the microorganism to produce a particular protein, which itself is another encoded poem.

The article informs its general audience that cells use their genetic sequences as templates for constructing proteins. Bök manipulated the genetic sequence of a test organism, E.coli, which against all odds now produces the anticipated protein. In his own words, Bök “engineer[ed] a primitive bacterium so that it becomes not only a durable archive for storing a poem, but also a useable machine for writing a poem”¹⁸. Like Bök’s lectures on the project (available on youtube¹⁹ and vimeo²⁰), the BBC report emphasises the extreme difficulty of devising a two-level chemical cryptogram²¹ that not only links “letters of the alphabet to specific nucleotides” (i.e. the type of molecules that make up a genetic sequence), [but] also [...] allow[s] the ensuing protein to be decoded back into a brand new poem, by assigning a different set of letters to specific amino acids” (the organic compounds which make up a protein). It took “Dr. Bok” [sic] four years just to work out the code”²².

¹⁴ <https://www.theguardian.com/science/2011/apr/24/dna-poem-christian-bok-xenotext>

¹⁵ <https://www.newscientist.com/blogs/culturelab/2011/05/christian-boks-dynamic-dna-poetry.html>

¹⁶ Christian Bök, The Xenotext: Book 1 (Toronto: Coach House Books, 2015).

¹⁷ Rachael Buchanan, “Poet writes verse in bug’s gene and receives reply,” BBC News Science and Environment, 28 April, 2011, <http://www.bbc.co.uk/news/science-environment-13001382>; see also Christian Bök “The Xenotext Works”, 3 April 2011, <http://www.poetryfoundation.org/harriet/2011/04/the-xenotext-works/>.

¹⁸ Christian Bök, “The Xenotext Experiment” (see above n. 2), p. 229.

¹⁹ <https://www.youtube.com/watch?v=SyCQfBZwRPA>

²⁰ <https://vimeo.com/58653647>

²¹ A cryptogram is an encoded message (or poem).

²² Rachael Buchanan, “Poet writes verse in bug’s gene and receives reply,” BBC News Science and Environment, (see above, n. 17), sixth paragraph.

Initially envisioned as a collaboration with scientist Stuart Kauffman, the “iCore Chair for the Institute of Biocomplexity and Informatics at the University of Calgary”²³, more recent progress reports see Kauffman reduced to a provider of after-hours laboratory space, or disappearing altogether. Bök himself emerges as the maverick who, without formal scientific training, “taught himself molecular biology and computer programming for the purpose of his project”²⁴. “I have [...] done all the genetic engineering and proteomic engineering myself, designing and optimizing the gene on my own, while working out the simulations for the resultant, foldable protein, using my own academic resources,” Bök writes in a blog post²⁵. He called on a commercial lab merely to build the gene for him. This narrative culminates in Bök declaring himself “the first poet in literary history to have engineered a microbe to write poetry”²⁶.

In addition to this historical event, Bök regularly appears as a sculptor. The BBC website depicts him next to a large scale model of the gene he built out of so-called Molymod Molecular Kits²⁷. Whilst on a PR tour, Bök’s current objective is having the gene implanted into the target organism (*D.radiodurans*) rather than *E.coli*. *D.radiodurans* is thought to be extremely durable, facilitating the post-apocalyptic survival of the poem. The narrative framing of the XE foregrounds the cryptographic complexity, unprecedentedness, ambitiousness and herculean nature of the project, epitomised in the fact that it took Bök four years of failures, near resignations, probability-defying fresh starts, in short, superhuman persistence to work out, or to use Bök’s terminology, to 'discover' a code that fitted the requirements of the brief.

²³ Christian Bök, "The Xenotext Experiment" (see above n. 2), p. 229.

²⁴ Rachael Buchanan, "Poet writes verse in bug’s gene and receives reply," BBC News Science and Environment, (see above, n. 17), eighth paragraph.

²⁵ <http://ronsilliman.blogspot.co.uk/2011/05/christian-b-o-k-this-is-one-of-notes.html>

²⁶ See above, n. 25.

²⁷ <http://www.molymod.com/>

Authorship controversy: pink microbe or red herring?

In 2011, a controversy ensued around the particular enactment of authorship in the XE. U.S. poet Ron Silliman, via Twitter, challenged Bök's claim that the microbe had authored the second poem (which is enciphered in the protein the microbe produces as a result of its engineered gene). In his blog entry from 10th May 2011²⁸, Silliman argues that, actually, it is Bök telling the microbe what to write, rather than the other way around. On 17th May 2011, Bök responds as follows:

“I think that [Silliman's] objection fails to comprehend the nature of the writing process required to generate these two poems. I do not tell the organism what to write - it tells me what to write. I cannot simply make it say whatever I want, since the biochemical constraints that govern the translation of the genetic sequence into a protein sequence define the parameters for my own expression. I have to respond directly to its own biology. I have to produce a viable, benign protein that is neither cytotoxic to the organism nor destroyed by the organism. I have to generate a gene sequence, optimized for implantation into the organism so that it integrates easily into such a genome. I have to come up with an encipherment for my message that can actually fulfill all these tasks, while saying something both beautiful and meaningful – both in the implanted genome and in the resulting protein. I am, in effect, trying to

²⁸ <http://ronsilliman.blogspot.co.uk/2011/05/deinococcus-radiodurans-future-of.html>

conduct a kind of dialogue between my own lingual code and the genetic code itself. I might suggest that, in this dialogue, the organism has lots of input, since I am entirely at its beck and call. I have to respond entirely to its rules. I have not written the poem – so much as I have discovered it, finding its 'singular potential' among eight trillion, useless ciphers....."²⁹ (my emphases)

Whether constraints imposed by the microbe's physiology prove the generative principle, or whether it is Bök inscribing his poem upon the reluctant organism, Silliman left Bök's response unchallenged. The controversy dissolved into friendly banter between the two poets ("no worries, Ron"). It is either Bök telling the bacterium what to say (if you believe Silliman), or the bacterium telling Bök (if you believe Bök). The authorship question was also presented by a member of the audience in the Q&A after a lecture at Simon Fraser University in January 2013, entitled The Xenotext: A Progress Report³⁰, suggesting that the question 'who writes' captures the public imagination.

This framing of the experiment as a question of 'Who writes? Bök or E.coli?', that is, the focus on determining authorship one-sidedly, directly parallels the particular either/or distribution of agency that underpins both, scientific positivism and relativism. Locating all agency with the microbe and its biological specificity, Bök pursues a version of positivism; whereas Silliman's reading (which locates control and agency with Bök) amounts to a staging of relativism.

In the natural sciences, positivism often entails a particular language of 'finding' or 'discovering' something, also reproduced in the XE (i.e. discovering the one possible cipher or

²⁹ <http://ronsilliman.blogspot.co.uk/2011/05/christian-b-o-k-this-is-one-of-notes.html>

³⁰ <https://vimeo.com/58653647>

the one mutually encipherable poem couplet; or the previously undiscovered, natural entity in a scientific experiment). This 'discovering' is seen to be directly opposed to 'constructing', 'fabricating', or 'creating', for example. In other words, historical epistemologies depend on a clear distinction between relativism and positivism. The experimenter has either made (up) the facts, or s/he accounts for the facts as they are, i.e. something emerges that is not human-made. The credibility of a scientific object depends on whether the experimental subject is seen to have made it (up), or discovered; which in turn translates into a particular way of determining agency, i.e. does agency lie with the experimental subject, or with the object under investigation. These presumptions continue to inform the popular conception of science as well as the version of science enacted in many scientific and literary experiments. Bruno Latour famously linked the paradigm that underlies historical epistemologies to a false dichotomy between mind and world, or what he termed Descartes's 'fantasy of a mind-in-vat'³¹. Latour argued that only from the perspective of an unrealistic, disembodied mind does it make sense to theorise knowledge as distinct from the world. Only from this position does it make sense for a knower to wonder how to connect with the outside world. The Cartesian 'fantasy' is at the root of representationalism, i.e. the notion that representations are independent from the practices of representation. I will discuss some of the critiques that have been mobilised against representationalism in science studies, through more practice-led conceptualisations of scientific experimentation as intervention³², later in this article.

By assigning agency (or authorship) to the experimental object, the microbe, Bök effectively stages himself as the mere executor, facilitator, avant-garde poet, the subject of

³¹ Bruno Latour, Pandora's Hope: Essays on the Reality of Science Studies (Cambridge and London: Harvard University Press, 1995), p. 4.

³² For an example pioneering the shift from a representational towards a performative paradigm in science and technology studies, see Ian Hacking Representing and Intervening: Introductory topics in the philosophy of natural science (Cambridge: Cambridge University Press, 1983).

scientific positivism, or what I will term the subject-of-no-subjectivity, aiding the natural emergence of the one 'true' poem couplet 'inherent' in the experimental constellation. The emphasis on Bök's extensive labour behind the discovery of the poem does not contradict the assignment of exclusive agency to the microbe. Even for those who have access to it, the production of the subject-of-no-subjectivity involves labour and deliberate staging. As Bruno Latour has shown, it is the experimenter's task to facilitate the conditions that allow the experimental object to appear of its own accord³³. I will now explore some of the problems with this subject position, including its exclusiveness, purchase on power, and its dependency on the production of marginal subject positions specifically in the context of avant-garde poetry.

Conceptual writing: the contemporary avant-garde?

In order to understand what might be at stake in reproducing historical epistemologies in contemporary avant-garde writing practices, I will situate the XE in the wider field of conceptual writing. Arguably, the XE is a unique but representative example that encapsulates several of conceptual writing's defining discourses. They include the implementation of a constraint-based writing procedure; a preoccupation with authorship; the implicit reproduction of historical epistemologies and normative forms of subjectivity and objectivity; and the extension of literature into other disciplines (including the arts and biochemistry).

Conceptual writing encompasses a diverse range of literary forms in which a concept is seen to predetermine the writing process. In other words, the concept is seen to effect the

³³ Bruno Latour, Pandora's Hope: Essays on the Reality of Science Studies (see above, n. 31); also Bruno Latour, Science in Action: How to follow scientists and engineers through society (Milton Keynes: Open University Press, 1987).

work, whereas its practical execution becomes a "perfunctory affair"³⁴. To give some examples, Christian Bök's EUNOIA³⁵, a univocal lipogram, in which all chapters are composed of words consisting of only one of the vowels respectively. U.S. poet, MoMA's poet laureate, and conceptual writing's figurehead Kenneth Goldsmith's works appropriate or plagiarise already existing language material into a poetic context. For example, The Weather³⁶ is advertised as a transcript of a year's worth of weather reports on New York radio station WIIN. Avant-garde poet David Melnick's homophonic translation of Homer's Iliad, Men In Aida³⁷ is a more marginal example of an earlier genealogy of constraint-based, procedural or rule-governed methodologies, now subsumed into conceptual writing. Alongside all of the aforementioned, the genre-defining anthology Against Expression: An Anthology of Conceptual Writing³⁸, co-edited by Craig Dworkin and Kenneth Goldsmith, enlists novels such as Kathy Acker's Don Quixote: which was a Dream (1986), Samuel Beckett's Molloy (1951), James Joyce's Finnegans Wake (1939), and Georges Perec's A Void (1969) into its project, retrospectively reconfiguring the canonical avant-garde.

With its catchy, simplistic and provocative poetic strategies which read like a synopsis of a Hollywood blockbuster ("How does a poet ensure his work lives forever?"³⁹), conceptual writing is a media-friendly poetics that has gained a reach and traction and caught the attention of different publics. Key conceptual writers have garnered the attention of the mainstream media and science journalism. Goldsmith appeared at the Whitehouse⁴⁰ and on

³⁴ Kenneth Goldsmith, "Paragraphs on Conceptual Writing", Open Letter: A Canadian Journal for Writing and Theory 12:7 (2005): p. 109.

³⁵ Christian Bök, EUNOIA (Toronto: Coach House Books, 2001).

³⁶ Kenneth Goldsmith, The Weather (Los Angeles: Make Now Press, 2005).

³⁷ David Melnick, Men in Aida (Antwerpen: Uitgeverij, 1983/2015).

³⁸ Craig Dworkin and Kenneth Goldsmith (eds.), Against Expression: An Anthology of Conceptual Writing (Evanston: North Western University Press, 2010).

³⁹ See above n. 14.

⁴⁰ On 11 May 2011, Goldsmith appeared at presidential couple Obama's A Celebration of American Poetry at the White House: <https://www.youtube.com/watch?v=hMSvrIPhA4Y>

US national television, for example. The reporting focused on Goldsmith's wearing a paisley suit as much as on his provocative poetic strategies including 'uncreativity', the 'unboring boring', and 'plagiarism'. However, following a verbatim reading of Michael Brown's autopsy report (the black teenager fatally shot by a white police officer in Ferguson, Missouri, in 2015) in the form of a poem at Brown University on 13th March 2015, public opinion appears to have turned against Goldsmith⁴¹. My intention is not to add to the critiques of the racism enacted in Goldsmith's particular piece, but to identify the normative epistemologies, subject and object positions reproduced within conceptual writing which create the possibility for racist works such as The Body of Michael Brown to emerge. The following section situates conceptual writing within historical experimental writing practices, and maps out some of the concerns that have shaped its writing strategies.

'Uncreativity' and the dichotomy between authorship and process

Despite borrowing the name and orientation from the conceptual art movement that emerged in the 1960s, conceptual writing practices were shaped in response to precedent avant-garde literature (specifically language poetry), and in opposition to mainstream approaches to authorship, specifically lyrical expression (the idea of an author expressing a pre-existing 'inner' self). A central concern that shapes conceptual writing practices is to explore modes of authorship that go beyond the traditional model of the individual subject expressing themselves. This extends existing problematisations of lyrical forms of expression within language writing, and arguably an orientation within earlier avant-garde literatures which are often seen to enact more collective (rather than subjective) forms of signification.

⁴¹ <http://www.theguardian.com/books/2015/mar/17/michael-brown-autopsy-report-poem-kenneth-goldsmith>

Co-editor of Against Expression: An Anthology of Conceptual Writing Craig Dworkin confirms an editorial policy which focused on text that “does not seek to express unique, coherent or consistent individual psychologies and that [...] refuses familiar strategies of authorial control”⁴². He continues that “[i]nstead of natural expression or individual authorial voice, the anthology sought impersonal procedure. Instead of psychological development or dramatic narrative, it sought systems of exhaustive logical [...] permutation”⁴³. In his provocative, manifesto-like Paragraphs on Conceptual Writing, Goldsmith suggests that this concept-led, literary machine is not to be interfered with. He states that “[t]o work with a plan that is preset is one way of avoiding subjectivity. [...] [T]he writer would select the basic form and rules that would govern the solution of the problem. After that the fewer decisions made in the course of completing the work, the better. This eliminates the arbitrary, the capricious, and the subjective as much as possible. This is the reason for using this method”⁴⁴. This terminology of interference reoccurs in Dworkin’s editorial where he states that admired works were often omitted from the collection because they had “too much authorial intervention”, preferring works incorporating strategies of “automatism, reticence, obliquity, and modes of noninterference”⁴⁵.

The rationale that shapes conceptual writing's orientation towards process and against expression is 'uncreativity'. Uncreativity as a radical strategy derives from the provocation that any new literary production only adds to the already existing surplus of written material in the digital age. In a context of presumed overproduction, uncreativity is considered the most progressive and radical writing strategy, the one that distances conceptual writing from

⁴² Craig Dworkin and Kenneth Goldsmith (eds.), Against Expression: An Anthology of Conceptual Writing (see above, n. 38), p. xliii.

⁴³ Craig Dworkin and Kenneth Goldsmith (eds.), Against Expression: An Anthology of Conceptual Writing (see above, n. 38), p. xliii.

⁴⁴ Kenneth Goldsmith, "Paragraphs on Conceptual Writing" (above n. 34), p. 109.

⁴⁵ Craig Dworkin and Kenneth Goldsmith (eds.), Against Expression: An Anthology of Conceptual Writing (above n. 38), p. xliii.

all precedent avant-gardes. Uncreativity as an orientation is further shaped by the aforementioned presumption that the language poets have exhausted the scope for literary experimentation and it is impossible to generate new forms of writing since everything has already been done⁴⁶. Under the banner of uncreativity, "[t]he conscientious writer's task is [...] to curb productivity". The conscientious writer's task is to reuse, plagiarise, transpose, cut & past, or recontextualise already existing language material, ideally in bulk. In other words, conceptual writers "[u]nderstand writing to be more graphic than semantic, more a physically material event than a disembodied or transparent medium for referential communication"⁴⁷. Conceptual writing practices enact a representational dichotomy between language as a material event and language as semiotic function, and a correlative dichotomy between authorship and process. The rationale of uncreativity connects a commitment to language as a material event to process-led (conceptual) writing on the one hand; and referentiality and (original) narrative content to authorship, inspiration, innovation, creativity, overproduction, expression, sentimentality (as opposed to intellect), and ultimately the psychological individual on the other. Accordingly, conceptual writing is not meant to be read (for semantic content). A 'thinkership' is thought to have replaced a more traditional readership⁴⁸.

⁴⁶ The argument has been made that many of the major preoccupations of contemporary experimental poetics are further engagements with their initial problematisations within language writing, rather than anything more radically original. For example, language writing's centralisation of the nonrepresentational capacities of language, i.e. the idea that the signs of language are materiality and substance as such, rather than just refer to "things of nature" is intensified in contemporary approaches to working with heaps of language that are not meant to be read. See Charles Bernstein, "Stray Straws and Straw Men", in Content's Dream: Essays 1975-1984 (Evanston Illinois: Northwestern University Press, 1986/2001), p. 44. Further, the impersonalisation of the writing process within conceptual writing might be seen to extend language writing's precedent critiques of natural expression and personal authenticity in mainstream poetry.

⁴⁷ Craig Dworkin and Kenneth Goldsmith (eds.), Against Expression: An Anthology of Conceptual Writing (above n.38), p. xliii.

⁴⁸ <https://www.poetryfoundation.org/harriet/2008/06/conceptual-poetics-kenneth-goldsmith/>

Theory-driven perspectives versus the 'turn to practice' in science and technology studies

I have quoted some of the language of interference, temptation, and interception in relation to conceptual writing, because it derives from the positivist sciences. Historical epistemologies are based on the presumption that experimentation in the sciences is a theory-driven (conceptual?) activity, a derivative test of an existing hypothesis (whose execution might be considered a perfunctory affair). I have already discussed that these epistemologies rely on a particular unmarked version of subjectivity, a subject-of-no-subjectivity, operating an experimental apparatus without bias and interference so as to represent a scientific object-under-investigation (and that in turn represents 'nature') as it 'really is'. The clear separation of human interference and 'nonhuman', empirical object is seen to guarantee the uncorrupted nature of the discovery, and the facticity of what emerged from the experimental procedure. Historical epistemologies are connected to incontestable truth claims and sociopolitical and economical power. They have been connected to the a priori rejection of criticality, questioning, and the contestation that gender, race and class-related ideologies could possibly affect the empiricist sciences⁴⁹. Presented as an algorithm or automatism running its course with minimal authorial interference, many forms of conceptual writing enact notions of theory-driven experimentation and positivism in the disciplinary context of literature. The strategies designed to bypass the authorial subject do not bypass the authorial subject at all, but inadvertently reproduce the unmarked subject-of-no-subjectivity which, to reiterate, is directly linked to incontestable forms of objectivity, and epistemological and social power.

⁴⁹ Sandra Harding, The feminist question in science (Ithaca, NY: Cornell University Press, 1986) links the sciences' extreme resistance to consider metatheoretical assumptions and feminist critiques to the strong positivist and empirical traditions. See also Nina Lykke and Rosi Braidotti, Between Monsters, Goddesses and Cyborgs: Feminist Confrontations with Science, Medicine and Cyberspace (London and New Jersey: ZED Books, 1986), p. 3.

The problems I previously identified in Christian Bök's XE are far from exceptional, but representative for conceptual writing more widely.

As part of an ongoing 'turn to practice' in science studies, scholars have rejected objectivist claims of 'no interference' in favour of more embodied epistemologies and ontologies that consider the performativity of experimentation. In science and technology studies and related perspectives, the performativity of experimentation refers to the assumption that scientific experiments produce the phenomena purportedly under investigation⁵⁰. From these perspectives, rather than the scientist or experimenter *either* observing a pre-existing object without interfering, *or* making something up, both, experimenter and object under investigation come to be defined within a shared experimental arrangement. How specific phenomena, subjects and objects are enacted and stabilised within experimental practice in science is subject to enquiry and individual case study. Many case studies and ethnographies of laboratory practice that have been put forward have documented a discrepancy between embodied, localised, situated scientific practices and experiments, and the way they are conceptualised in scientific theories, literatures, and papers⁵¹. From these perspectives, experimental practices always exceed, or drastically differ from, the concepts they are designed to test, verify or embody. For example, Bruno Latour famously argued that scientists do something different to what they say they do⁵².

Arguably, a similar disjuncture exists between the theory and practice of conceptual

⁵⁰ See for example Karen Barad, Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning (Durham, NC: Duke University Press, 2007); Annemarie Mol, The Body Multiple: Ontology in medical practice (Durham and London: Duke University Press, 2002); Andrew Pickering, The Mangle of Practice: Time, Agency & Science (London and Chicago: The University of Chicago Press, 1995).

⁵¹ For example, Bruno Latour & Steve Woolgar, Laboratory Life: The Construction of Scientific Facts (Princeton, New Jersey: Princeton University Press, 1979/1986); or Hans-Jörg Rheinberger, Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube (Stanford: Stanford University Press, 1997).

⁵² Bruno Latour, Science in Action: How to follow scientists and engineers through society (see above, n. 31).

writing. In conceptual writing the concepts shape, but do not determine the writing process and literary output. Consider Marjorie Perloff's close-reading of Kenneth Goldsmith's allegedly unreadable work Traffic⁵³. Traffic records "a twenty-four-hour period of New York radio station WINS (1010 AM) 'Panasonic Jam Cam [Camera]' traffic reports at ten-minute intervals on the first day of a holiday weekend"⁵⁴. Perloff argues that subjective decisions have shaped Goldsmith's allegedly machinic transcriptions. Traffic, she argues, is hardly passive recycling. There is "something surreal about this seemingly ordinary sequence of traffic reports"⁵⁵. Artful authorial manipulation, Perloff suggests, has turned the original traffic report into a "theatre of the absurd". For example, on close-reading, the 24 (rather than 48) hour period covered in Traffic appears to extend over an entire bank holiday weekend.

Arguably, Goldsmith's unacknowledged manipulation, authorial interference and staging of 'unoriginal genius', to use Perloff's term, parallels the unacknowledged labour involved in staging the powerful unmarked subject position in scientific positivism. In the context of avant-garde literature (rather than science), conceptual writing practices might not be staging epistemological truth claims, objectivity, or positivism, but they are staging (unoriginal) genius, power and the spectacle of self-transformation. Ultimately, these practices and stagings have engendered Goldsmith's emergence as the MoMA's poet laureate⁵⁶, for example. In the disciplinary context of art and literature, conceptual writing practices might not produce scientific matters of fact (compared to experimental practices in the sciences). But

⁵³ Kenneth Goldsmith, Traffic (Los Angeles: Make Now Press, 2007).

⁵⁴ Marjorie Perloff, Unoriginal Genius: Poetry by Other Means in the New Century (Chicago: University of Chicago Press, 2012): p. 200.

⁵⁵ Marjorie Perloff, Unoriginal Genius: Poetry by Other Means in the New Century (above n. 53): p. 208.

⁵⁶ The transformation of Kenneth Goldsmith resembles the emergence of chemist Louis Pasteur (1822-1895) as the discoverer of microbial fermentation over the course of a series of historical experiments. See Bruno Latour, Pandora's Hope: Essays on the Reality of Science Studies (see above, n. 32).

staging the principle of uncreativity (in opposition to creativity and mainstream literature), they produce avant-garde credentials and status within and beyond their field.

The Xenotext Experiment: the microbe, biological determinism and the concept of gene control

I will now resume my discussion of the humans and nonhumans produced in the XE. So far, I have identified the quasi-positivist, impossibility-defying, repeat-failure-surviving, maverick experimenter Christian Bök; and the uniquely enciphered poem couplet whose discovery, we now see, Bök's avant-garde credentials depend on. This section takes issue with the feminine nymphet and microbe, whose subjectivity is reduced to its materiality, and its materiality to its function as a formulaic constraint, i.e. its role in narrowing down the range of possible ciphers. Donna Haraway and others have argued that experimental practices in the sciences are naturalised, hidden and increasingly insidious techniques of producing gendered, normative and exclusive subject positions. Historical epistemologies not only define those who have access to the normative subject positions created therein, but also those who don't. Haraway asks, for example: "How did some men become transparent, self-invisible, legitimate witnesses of matter of fact, while most men and all women were made simply invisible, removed from the scene of the action [...]"⁵⁷

The microbe as experimental object substitutes or acts as a generative constraint, the concept that determines the writing process. It, or to go along with Bök's gendering of the microbe, 'she', is integrated into the experimental system, engendering further objects, including the cipher, and the two poems, 'Eurydice' and 'Orpheus'. Symptomatically for the

⁵⁷ Donna Haraway, Modest Witness@Second Millenium: FemaleMan meets OncoMouse: Technoscience and Feminism (New York and London: Routledge, 1997): p. 29.

side-lining of semiotic content in conceptual writing (and the foregrounding of the material working relationship with the text), Bök's poems have received less media and critical attention than Bök himself and the doctored microbe. For example, the BBC report neglects to report that the benign protein produced as a result of the new gene causes the microbe to fluoresce with a rosy or pink glow. This pink glow is the microbe's enactment of the semiotic content of the poetic response enciphered in the protein, the first line of which reads "[t]he faery is rosy of glow"⁵⁸. When Bök himself mentions the content of the poems, he describes the pink faery's glow as the feminine response of a "nymphet" to his "herdboy's" poem, 'Orpheus' (which begins with the phrase "Any style of life is prim"⁵⁹). In less normative socio-cultural and referential contexts, a faery that glows pink in a fay way might be as likely to be male as female, trans or gender non-conforming, suggesting interesting queer reading possibilities of microbial poetry, but this is not my intention.

The XE not only stages a biologically determined (feminine) subject or object, the microbe (Euridyce), whose agency is reduced to the agency of her biological body, but also biological determinism itself as a particular version of biology. The queer cultural studies theorist Sara Ahmed reminds us that what counts as biology has been a question within feminist enquiry rather than a given⁶⁰. The version of biology reproduced here, where biology dictates, as opposed to influences, the micro-organism's behaviour, has come under critique not only from within feminism, but also queer and gender studies, critical race studies, sciences studies, philosophy and increasingly the natural sciences and molecular biology themselves. Arguably, the concept of biological determinism (a priori of the XE) is

⁵⁸ Christian Bök "The Xenotext Works" (see above n. 17).

⁵⁹ At the time of finalising this article in January 2017, the link to this quote has disappeared or been removed from the internet. Further, the two poems themselves appear to have vanished from the internet (bar their first lines).

⁶⁰ Sara Ahmed "Some Preliminary Remarks on the Founding Gestures of the "New Materialism"", (see above, n. 7).

now practically untenable. Framed by two mutually exclusive propositions, does the experiment work or does it not work, R.durans Euridyce's agential room for manoeuvre is narrowed to the extreme and ultimately closed down within the experimental set up of the XE. 'Her' options, such as destroying the protein (hence critiquing Bök's poems?), not producing the right protein (hence articulating something other than the anticipated response); dying en masse, et cetera, are constituted as failures of the experiment. They are non-events, the details of which have yet to be mined for their subversive potential. What Bök does report (as a failure), i.e. R.durans noncompliance and liability to destroy the manipulated protein, suggests that it or she is a particularly queer subject who refuses to cooperate on Bök's terms. However that may be, what's at stakes for Bök are his avant-garde credentials which in turn depend on the fact that the microbe's responses are seen to be independent of his influence.

The XE not only enacts biological determinism, but more specifically, a form of genetic determinism. Genetic determinism is a simplistic and powerful concept based on what the feminist historian and philosopher of science Evelyn Fox Keller⁶¹ discussed as the generative metaphors of gene action and gene control. Gene action is the prevalent idea that genes produce their effects, or that “all development is merely an unfolding of pre-existing instructions encoded in the nucleotide structures in DNA”⁶². This discourse has influenced scientists, administrators, funding agencies and policy makers, and provided “powerful rationales and incentives for mobilizing resources, for identifying particular research agendas, and for focusing scientific energies and attention in particular directions”⁶³.

⁶¹ Evelyn Fox Keller, Refiguring Life: Metaphors of Twentieth Century Biology (New York: Columbia University Press, 1995).

⁶² Evelyn Fox Keller, Refiguring Life: Metaphors of Twentieth Century Biology (as above n. 60), p. 21.

⁶³ Evelyn Fox Keller, Refiguring Life: Metaphors of Twentieth Century Biology (as above n. 60), p. 21.

From its conception many scientists have argued that there were serious problems with the metaphors of gene action and gene control. These metaphors have shaped the progress of modern genetic science one-sidedly, Fox Keller argues, at the cost of more nuanced, developmental alternatives that biologists have proposed since the early twentieth century. More complex research trajectories were technically possible all along, but they were marginalised because no one was interested. As a consequence, gene expression continues to be little understood. It is now known that the causal connection between genotype – all the genes in the cells of an organism— and phenotype - what the organism looks like and how it behaves - defies the simplicity presumed in the gene control and gene action models. Epigenetics or recent work on the microbiome for many confirm that social and cultural determinants affect basic biology, which in return might affect ecology, geology, in other words Earth itself. Famously, the current geo-historical epoch has been termed the Anthropocene, reflecting the significant effects of human behaviour on the Earth's ecosystems. This describes the active role of human agency, or human presence, not only in scientific facts, but also in all matter formerly known as nature⁶⁴. The version of objectivity enacted in otherwise innovative writing practices that relies on the separability of natural phenomena from human agency and the autonomy of science is no longer tenable in this context, if ever it was.

Whilst I commend Bök's engaging with science in a way that is not merely 'writing about', I question his presumption that literature and science are two autonomous, self-contained disciplines originally, and consequently the particular strategy he adopts to connect them. The XE enacts an additive version of interdisciplinarity, “integrat[ing] two mutually isolated domains of research [poetry and science] – domains that might not have, otherwise,

⁶⁴ Bruno Latour, "Agency at the Time of the Anthropocene" New Literary History, 2014, 45, pp. 1-18.

had any reason to interact, except under the innovative conditions of this artistic exercise”⁶⁵. One of the problems with this additive approach is that the XE stages an uncritical engagement, if not an enchantment, with mainstream science, specifically microbiology, reproducing many of its normative, positivist presumptions, implicitly and explicitly.

Readers of Configurations will be familiar with a long genealogy of transdisciplinary scholarship investigating the intersection of science and literature in scientific experimentation rather than work from the presumption of disciplinary autonomy. Situated within feminism, queer studies, critical race studies, science and technology studies, sociology, anthropology and the natural sciences, longstanding transdisciplinary perspectives have rejected human exceptionalism “and its corollary that culture is distinct and contrasted with nature”⁶⁶. From these perspectives, ideologies, imaginaries fictions and narratives cannot be disentangled from scientific knowledge procedures, but they are always already embodied in what comes to be naturalized within scientific positivism. For example, Donna Haraway’s concept of figural realism describes how normative metaphors, ideologies, fictions and narratives are literally embedded in scientific concepts, embodied in experimental apparatuses, enacted in experimental practices and realised in what manifests as a scientific fact, body, or object⁶⁷. From this perspective, the ways in which fictions and imaginaries materialise in scientific practices are far less voluntarist than those staged by Bök. His

⁶⁵ Christian Bök, "The Xenotext Experiment" (see above n. 2), p. 230.

⁶⁶ Carol MacCormack & Marilyn Strathern, Nature, Culture and Gender (Cambridge: Cambridge University Press, 1980), p. 1.

⁶⁷ Donna Haraway, Modest Witness@Second Millenium: FemaleMan meets OncoMouse: Technoscience and Feminism (see above, n. 56). For another example, see Sarah Franklin, "Life Itself: Global Nature and the Genetic Imaginary", in Sarah Franklin, Sarah, Celia Lury, and Jackie Stacey (eds.) Global Nature, Global Culture (London: Sage, 2000), pp. 188-227. Franklin uses the example of the Hollywood film Jurassic Park to discuss the cross-fertilisations of fact and fiction, and the art/entertainment and scientific industries, arguing that “[p]aleontologists closely working with the producers attested to having solved certain [paleontological] mysteries through the experimentation required to animate the dinosaurs convincingly” (p. 223).

objective to “infect” genetics with the “poetic vectors” of its own discourse so as “to extend poetry itself beyond the formal limits of the book”⁶⁸ might be countered with the perspective that poetry and fiction always already operate beyond the formal limits of the book: fictions might shape what emerges as fact in scientific practice and experimentation, for example. These extended, entangled workings of literary and scientific practice are disregarded in the rationale which shapes the XE, i.e. to connect two otherwise separate domains. They are also disregarded in the rationale, uncreativity, which shapes conceptual writing strategies more generally. Like the commitment to extend literary experimentation into other domains, uncreativity is shaped within a literary context (of exhaustion and overproduction), hence by disciplinary introspection. From transdisciplinary perspectives, a strong argument for the innovation of different imaginaries towards different futures is crucial and should be pursued in progressive avant-garde literatures. At the heart of this progressive avant-garde project would be a revised conception of what it means to be the subject and object of experimental writing practices, and, specifically, the engagement and production of non-normative subjects and objects.

Unsurprisingly, more subversive approaches to conceptual writing have come from those whose subjectivities are unlikely to disappear from their literary output (and who cannot and do not want to divorce semantic content or signification from authorial process). 'Softer', more nuanced (and often feminist, black, LGBTQI and/or working class) approaches to conceptual writing by poets and writers such as Dodie Bellamy, Renee Gladman, and Bhanu Kapil, and which are represented in I'll Drown My Book: Conceptual Writing by Women⁶⁹ for example, have been challenging the dichotomy between authorship and process in creative practice, opening up more nuanced research trajectories. Caroline Bergvall asks, for

⁶⁸ Christian Bök, "The Xenotext Experiment" (see above n. 2), p. 231.

⁶⁹ Caroline Bergvall et al (eds.), I'll Drown My Book: Conceptual Writing by Women (Los Angeles: Les Figues Press, 2012).

example: "How does one put a text together that depersonalizes, that disengages from personalized modes, yet manages to engage with processes of personification and identification?"⁷⁰

Conclusion

This article has drawn on critiques of scientific relativism, positivism, biological determinism, gene control and additive versions of interdisciplinarity to challenge some of the long-term presumptions that inform Christian Bök's Xenotext Experiment and conceptual writing practices more widely. As it establishes itself as the contemporary literary avant-garde, conceptual writing has consolidated a dichotomy between formal experimentation (conceptual writing) on the one hand, and innovative content (works that might fictionalise subjective difference) on the other. Depriving content-led works of their avant-garde credentials, conceptual writing ultimately works as a gatekeeper for a normative avant-garde. Almost in spite of conceptual writing, diverse and innovative poetics have been proliferating in the US, Canada and the UK. Partially, this development is made possible by new publishing platforms seeking out and promoting experimental writing from writers of marginal backgrounds (for example, 3:AM, Minor Literature[s], Queen Mob's and Berfrois). Often inspired by poetics pioneered by working class and queer writers of New Narrative⁷¹, for example, these forms of experimental writing have yet to receive anything like the level of attention bestowed on conceptual writing.

⁷⁰ Caroline Bergvall, "The Conceptual Twist: A Foreword". In Caroline Bergvall et al (eds.) I'll Drown My Book: Conceptual Writing by Women (Los Angeles: Les Figues Press, 2012), p. 21

⁷¹ New Narrative is a movement and theory of queer and working-class experimental writing which emerged in San Francisco in the 1970s. See Bellamy, Dodie & Killian, Kevin (2017) *Writers Who Love Too Much: New Narrative Writing 1977-1997*. New York: Nightboat Books; or Burger, Mary et al. (eds.) (2004) *Biting the Error: Writers Explore Narrative*. Toronto: Coach House Books.

Kenneth Goldsmith famously argued that there is nothing worse than "art that wallows in gaudy baubles"⁷². Like expression, subjectivity, lyricism, referentiality, innovation, and creativity, "art that wallows in gaudy baubles" contravenes the logicity, depersonalisation, and alleged neutrality of conceptual writing. Pink faeries and gaudy baubles⁷³ may well come to stand for what is excluded from conceptual writing, including the potential for radical literary innovation if more marginal subjectivities were enrolled and recruited into the experimental writing process, rather than obviated. It may be true that uncreativity in conceptual writing is achieved by the author stepping back and letting the literary machine run its course, as Kenneth Goldsmith might have it. An inclusive future of avant-garde literature is another story altogether.

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⁷² See Kenneth Goldsmith, "Paragraphs on Conceptual Writing" (see above, n. 34), pp. 110-111. "New materials are one of the great afflictions of contemporary writing. Some writers confuse new materials with new ideas. There is nothing worse than seeing art that wallows in gaudy baubles. The electronic writing landscape is littered with such failures."

⁷³ See also my avant-garde novel, Isabel Waidner, Gaudy Bauble (Manchester: Dostoyevsky Wannabe, 2017).