

Book 2.0
Volume 3 Number 1

© 2013 Intellect Ltd Article. English language. doi: 10.1386/btwo.3.1.45_1

STEVEN MALČIĆ

University of California, Santa Barbara

In vivo, in silico: **Ark Codex ± 0 and the vital forms of bookwork**

ABSTRACT

This article examines a central aspect of bookishness in the digital age, wherein the coexistence of paper codices along with their electronic counterparts fosters the interaction of life and code, as code is the inscription of life, and life the instantiation of code. Ark Codex ± 0 exemplifies this feedback loop. Ark Codex ± 0 traces the development of biological organisms through scientific notation, language and math, all while illustrating a bloody collage of the biblical myth. The Calamari Press, its vanity publisher, situates itself as a codex-maker in a time of digital production by privileging the book form over the digital file, while simultaneously fostering a print culture through digital paratexts, such as videos of the production process, on its website. While you can purchase the book for \$40 on the Calamari site, a pdf of Ark Codex ± 0 is also offered at a 'pay what you want rate'. Ark Codex ± 0 is a remix with multiple channels of distribution, a text you encounter in multiple ways. This article argues that the new environment of print culture elicits not only the act of reading, but an embodied encounter with the text both in vivo and in silico, the vital forms of bookwork in the digital age.

KEYWORDS

print culture
code
materiality
remix
cybernetics

Ark Codex ± 0 (Anon. 2012) is indescribable. One critic called it 'a deformed retelling of Noah's Ark, mashed together with math and feedback loops and blood' (Butler 2012). True enough, yet such a description still leaves the

1. Matthew Kirschenbaum (2008: 10–12) offers a great discussion of the forensic materiality of hard drives, which informs, but does not shape, my use of materiality.

uninitiated, that is, those who have not themselves grappled with the *Ark*, scratching their heads. The website of the Calamari Press, the *Ark*'s independent publishing house based in New York and headed by Derek White, advertises the book with a lengthy tract worth quoting in full (Calamari Press 2012):

Ark Codex ± 0 is an authorless book object of art & text inked on pre-existing book pages & reformulated to induce an abstracted retelling of Noah's fabled tale.

Ark Codex ± 0 speaks for itself – a self-organizing & self-contained archeological archive of language for the sake of language, an artifact collaged of image & text mined from unspecified or unknown origins; deconstructed, replicated, reappropriated, cut up, traced, erased, distressed, deterritorialized, rubbed, stained, repurposed, then reconstituted & expressed in a feedback loop driven by the same chance operations that guide natural selection. To define the meaning or intent of the assemblage that is *Ark Codex ± 0* would extinguish the very nature it sets out to describe or inscribe (which, in any event, is only an architected articulation of the very ark

[vessel, book object, apocalyptic seed bank] that it is)

According to the *Oxford English Dictionary*, 'to describe' variously means to write down, to set forth in words by reference to qualities or recognizable features, or to delineate the form or shape of something. A way to sum up these definitions might be to assert that 'to describe' is to present a legible representation of something. The Calamari Press's description of the *Ark* is also quite accurate, although it ends up thwarting the very description it just proposed: 'To define the meaning or intent of the assemblage that is *Ark Codex ± 0* would extinguish the very nature it sets out to describe or inscribe' (2012). How can one represent something by means of description when said description would undermine the thing itself? Perhaps Derek White, in an interview with the critic mentioned above, offers the best 'description' of *Ark Codex ± 0* as a book that is 'a fuck you to the ways of the current publishing industry' (Butler 2012).

It seems to me that *Ark Codex ± 0* is indescribable only insofar as we regard description as a form of representation, when a description of an object like the *Ark* requires dealing with the thing itself. In other words, a description of *Ark Codex ± 0* requires a material approach. When I speak of a material approach, I am referring to three perspectives through which we encounter *Ark Codex ± 0*: the 'matter' of the book; the 'material' of the book; and the 'materiality' of the book. Although I will expand on each of these in the course of the argument, I will sketch them here briefly. The 'matter' of the book refers to both content and the layout of the content. To describe the matter of *Ark Codex* is to offer a topography informed by specific language, tropes, or elements of narrative, specifying where they are in the book and even where they are on each page. The 'material' of the book refers to the object itself and any issues regarding production and distribution. *Ark Codex* exists in traditional bound-paper form as well as digital Portable Document Format (PDF), both of which need to be accounted for. The 'materiality' of the book is the most theoretically inclined of the three, accounting for the embodied production of meaning. I invoke 'materiality' largely in its legal sense, as referring to a book's relevance, or the book's quality of being 'important for the purpose contemplated' (*OED*). Materiality requires an agent of contemplation. This agent is the 'reader', or one who encounters the book as a sort of material witness.¹

The materiality of *Ark Codex* fosters an environment conducive to a multi-tiered feedback loop. Its matter, 'a deformed retelling of Noah's Ark' (Butler 2012), consists of the development of biological organisms represented through scientific notation, language and math. The material of the book consists of, on the one hand, \$40 worth of ink, paper and binding, which can be ordered online and sent to your house in a few days, and, on the other hand, a digital PDF at a pay-what-you-want rate, which you can download right now. In terms of materiality, a reader, user or witness encounters one or both of the book forms, whereupon the embodied production of meaning begins. This does not indicate a dynamic of the real (organisms, paper book, person) versus the symbolic (language, the digital PDF, the 'text'). At each level, we find the interaction of life and code, where code is the inscription of life, and life is the instantiation of code. At each level, then, we find a phenomenon adhering to itself variously, perhaps simultaneously, *in vivo* and *in silico*, the vital forms of bookwork in the digital age.

A material approach to *Ark Codex ± 0* underscores these vital forms of bookwork. In so doing, it emphasizes the feedback loop generated by these forms. Encountering this feedback loop comprises the culture of the *Ark* and points to an important aspect of bookishness in the digital age based upon the material encounter. In sum, *Ark Codex ± 0* is about one's encounter with it. A description of *Ark Codex* consists of describing that encounter, which is itself a form of critical engagement.

I. THE MATTER

The first material perspective is similar, but not the same, to the traditional notion of description as a representation of content, a notion that I aim to critique. I am influenced by Bonnie Mak (2011: 1) who discusses 'how the page matters', which is also the title of her book. She writes, 'To matter is not only to be of importance, to signify, to mean, but also to claim a certain physical space, to have a particular presence, to be uniquely embodied'. I focus on the matter, or content, of the book, not only in terms of language, tropes, and narrative structure, but how all this is laid out. In so doing, one does not only describe 'what the book is about', but layers this content upon a careful estimation of where it is 'on' the book, as well as 'in' the narrative. One might describe this sort of description as offering a topographical account of the book.

As *Ark Codex ± 0* is one of the most challenging texts one might ever encounter, I think it worthwhile to spend some time on how it matters. The Calamari Press emphasizes the matter of *Ark Codex*. The website reads, 'As a book object, ARK CODEX ±0 contains 144 colour images (& 5 additional intersitials), each with a running footnote/caption, bound by a narrative thread & organized recursively into 5 series (each with a textual «abstract»)' (Calamari Press 2012). Below, I offer a more complete topography of *Ark Codex ± 0*, which will set the foundation for further analysis in this article, and also, I hope, offer an initial guide for those encountering this text for the first time.

Topography of *Ark Codex ± 0*

1. Front cover (Figure 1.)

No part of the *Ark* should be passed over casually. As opposed to most books, the front cover of *Ark Codex* is not a throwaway ad space. It contains vital information orienting the reader to the ensuing narrative, if it can be called a narrative at all. In the upper left corner of the cover, we can make out the word

2. My understanding of code comes largely from Eugene Thacker (2004). He writes, 'Code is a set of procedures, actions, and practices, designed in particular ways to achieve particular ends in particular contexts. Code = praxis' (Thacker 2004: xii). He goes on to relate the mechanical and technical to the biological, via code: 'A code is a series of activated mechanical gears, or a stack of punched cards circulating through a tape-reading machine, or a flow of light-pulses or bits in a transistor or on silicon, or a vat of binding interactions between DNA fragments' (Thacker 2004: xiii).

3. In this sense, we can classify *Ark Codex* as a technotext. Katherine Hayles defines a technotext as 'a literary work [that] interrogates the inscription technology that produces it [and] mobilizes reflexive loops between its imaginative world and the material apparatus embodying that creation as a physical presence' (2002: 25).



Figure 1: Front cover of *Ark Codex ± 0*.

'Arctica' along with incomplete geographic coordinates. Nowhere else in the book is the setting mentioned. I only noticed this after reading an interview with Derek White, who said, 'The entire book takes place at the North Pole, so any geographic travel is psychogeographical - in the mind of the reader' (Butler 2012). Throughout the text, an ark is progressively built as life forms evolve in what seems to be compressed geologic time; there is, however, no movement from the Arctic Circle. White adds,

They [the assembled animals] don't go anywhere, they are waiting for a flood but it never comes, so the ark just sits there on the ice cap. And since the ark is the book itself, and the ark sits at the North Pole (ground zero for the flood in these times of apocalyptic global warming), then by transitive reasoning, yes, you could say the book is the place.

(Butler 2012)

The topos of *Ark Codex* is not only the Arctic, but also the *Ark Codex* itself.

The cover also orients the reader thematically. It exhibits a ship made of etchings and typed letters with a tree growing up out of the mast. The letters consist of As, Gs, Cs, with the masts themselves forming Ts, the letters used in genetic code² to signify nucleotides. A zero looms over the point at which the mast becomes the tree. This zero is the absolute zero, the point at which utter stasis occurs. Below the zero is a manmade artefact, the ark; above it is the quintessential symbol of nature, the tree. The manmade and the natural are both coded phenomena, whose material existence relies on a dynamic assemblage of information. That both the tree and the ship are made of wood is also significant, because, of course, so is the page of the book, unless you are reading the PDF. This reflexivity emphasizes the matter of vital forms at each step of analysis: the artificial ark and the natural tree, the natural book and the artificial PDF, all of which are various instantiations of a similar code.³



Figure 2: First page of the (+) hierarch index.

2. '(+) hierarch index' (2 pages)

Near the top of the first page of the index (Figure 2), one can make out '*Table des Matière*', or 'Table of Contents', and can see the outline of a page printed on top of layers of other pages. This seems to be layer upon layer of tables of contents from various French medical and biological books. A zero anchors the middle of the page, with a radial hierarchical chart coming out from it and ending in a series of different ratios. The disorienting *mise en page* prepares the reader for what is in store. Furthermore, 'hierarch index' is the first play on words among many in the text. 'Hierarch' is a neologism that, of course, points to the word 'hierarchy', the organizational principle of a traditionally conceived table of contents. The layering of page upon page, the stenciling on top of all this, and the radial hierarchy of ratios anchored in zero challenge this conception. Furthermore, 'hier' is French for 'yesterday'; so we can say that 'hierarch' also refers to the ark yesterday, the past ark, or the ark before its coming or becoming. Absolute zero is the focal point for this table of contents. The table of contents seems to offer a point of stasis, a stasis, however, that is already exploding forth to become apparent in phenomena. This accounts for the '(+)', signifying content beyond the zero, as any content must necessarily be.

3. '(+) 0:0: port log: becoming a continuous being to see a sea anemone churn' (9 pages)

This section establishes the initial conditions of a flooding system, which is, paradoxically, the negation of the flood and of any living organisms. With the introduction of a sea anemone (Figure 3), mobility is introduced. The sense detectors of the anemone indicate the separation of sensual life from the immobile barnacles attached to the bedrock of the sea. While waiting for the apocalyptic flood, the anemone evolves into a 'committing tree', which I read metonymically as standing in for the book itself, both based in wood



Figure 3: *The anemone of folio 0: 0.*

and having been borne of an animate being, such as the anemone or 'author'. This tree embeds 'an ontological lexicon in a phylogenic tongue bank', the origin of language, code and beginning of community. As community is based in communication, 'Blackbody Cavities' develop ears and mouths for giving and receiving information. In preparation for the flood, the sound of rain is assigned value and spoken, a natural phenomena translated into code. This coding of phenomena leads to the competitive conditions of natural selection, specifically in the context of culture, which, at this point, is difficult to separate from nature. They exist together in the coding of information. But as the flood does not come, the ark remains dormant, its inhabitants in a 'collective sleep state' of communication that appears to an observer as a 'fixed animal orgy'. The ark creates a feedback loop for the 'inevitable mass suicide' of its inhabitants.

4. '(+) port folio 0:1: the gathering darkness (as resourced in each dicebat mind)' (23 pages)

This section addresses sexuality and sexual reproduction in terms of the production of information and knowledge (Figure 4). Organisms called 'dicebats' emerge and leave 1s and 0s, traces of binary logic, in their wake, through a sort of sexual reproduction of information. The dicebats come from the evolution of an 'i/o' hole, or an input/output hole. While the i/o hole is described as a 'cavity with both tongue and ear', we can also read this as signifying sexual organs, for the sea anemones themselves have evolved to resemble 'Circe's genitals'. The dicebat is a pregnant play on words. As dicebats can fly in a 'fight-or-flight' response, they are like bats that leave either a 1 or a 0 randomly, like the roll of two-sided dice. (Will I give birth to a boy or a girl?) In Latin, *dicebat* is the third-person singular, imperfect, active verb, meaning 'he/she/it was speaking'. The



Figure 4: The reproduction of 'fruit' and language in folio 0: 1.

dicebats seem to indicate the role of communication in the act of reproduction, wherein information has always already conversed.

5. '(+) port folio 0:2: fur-tethering the waterlogged current to scaffold ghosts' (57 pages)

Economy and history are the emphases of this section, by far the longest of the book. It begins by stating that 'relative currency is used for our own protection, the abstraction of which is established as a form of literal exchange leading to inevitable market over-saturation'. In other words, exchange value has usurped use value and new markets have formed. Moreover, it is a form of 'literal exchange', the word 'literal' having descended from the Latin *litera*, meaning 'letter'. This relative currency refers not to money, but to language and the economy of code. Through such means the *Ark* asserts, 'History is embedded in the writing of it'. This section poses a sort of evolutionary history based on Marxist dialectics, applied to language instead of capital. The abstract for this section ends, 'We can only begin building a capacity for language so that when the pole shift comes you won't know what hit you'. In other words, this section explores the institutionalization of language in the form of ideology. When change does come, when the flood hits, we will be 'protected' from it in the blindness of our ideology, the blindness that comes from our language having been naturalized and depoliticized.

6. '(-) starboard folio 0:3: archetypal will & character sequence testimony (a sleep docket)' (35 pages)

This section seems to critique the notion of progress as it is popularly, and incorrectly, applied to the notion of evolution, specifically through language



Figure 5: As prose almost becomes legible at the top of the page, the word 'exit' appears as a mirror image of itself at the bottom of the page. Legibility cannot be read as progress, for the way out is actually the way in.

that implies information systems. It begins, 'Self-organization comes with the territory – spontaneously arising via the self-replicating process that begets'. At this point, the *Ark* has developed the capacity to evolve of itself, which is the basis of second-order systems theory in the domain of cybernetics (Figure 5). No matter how the 'union of colony organizers' garner 'collective benefits', there is no telling what will happen, no programming of the future. The evolved ability to evolve operates by means of contingency: 'There are no formulas to help us move forward'. The actions of organisms in the ark are 'based solely on our interaction with natural language', language that is merely 'built on the fly' and from this 'keeps evolving'. As such, those in the ark greet each other by saying, 'In an ark with me'. We can modify this greeting slightly, to read, 'in an ark (with m) e', or 'in anarchy'. In another paradox, the second-order system, having garnered the ability to evolve of itself, develops while containing the information of its own demise, information that nonetheless remains altogether unknown. We have reached the point of mass-suicide mentioned in the port log, as 'the self-organizing will should be treated as a suicide note to bottle & cast at sea'.

7. '(-) starboard folio 0:5: foxfire approach to architecture in anticipation of a catastrophic flood' (23 pages)

This section explores disaster, seen from an evolutionary scale and from an ecological point of view, asking what positive effects (+fx) might result from an apocalypse. As the population continues to build the ark based solely on

the fear of death, individuals never ask themselves about whether the disaster might have $+fx$ in terms of genetic diversity. While the flood, and even the anticipation of the flood, have $-fx$ at the scale of the individual, adversely affecting 'free-will and spontaneous regeneration', it is possible 'to speculate what residual $+fx$ [from] a catastrophic flood *could* have on our collective memetic diversity' (original italics). This speculation itself, though, indicates the possibility for $+fx$ of increased diversity even without the 'longitudinal genetic data' required for such a study, for language remains the baseline code linking the animate to inanimate. As the abstract to this section points out, 'by illuminating the words we prove the potential *capacity* exists' (original italics). The *Ark* itself is made of language, it is coded and therefore would subsist through the apocalypse; for it is made of the same stuff, even if it did not make it itself. If one would 'choose to abandon ship, the ark will remain even keel, floating without conscious intervention'.

8. '(–) post log: reversing in 8 genes the special singularity of discontinued beings'

The post log adopts a forensic register, focalized through 'we the jury'. It concludes that when the 'final judge sees the ark we built & that we are working toward 1 language', the judge will deem the language 'confounded' and 'scatter us in bytes'. This is a technological invocation of Babel, itself within the Noah narrative. The jury goes on to conclude that the words for 'it' mean nothing: 'they are only morphemed placeholders for alternative choices we can't put our finger on'. We might read 'it' as natural phenomena in general, the words used to refer to 'it' being completely arbitrary. We might also read 'it' as an acronym, signifying 'information technology', the words used to describe this 'IT' as placeholders for code, for that which subsists through the naturally occurring and the manmade alike. Perhaps this is why the judge scatters them in bytes and why the ark lies dormant upon a 'fractured bitmap'. In the end, the jury seems to sentence itself to death. The last words of *Ark Codex* read, 'No matter. A 13-coil noose is also used to tie terminal fishing tackle'. The organisms of the ark are bait, and this does not seem to matter, for we are returning to stasis, to absolute zero, wherein nothing matters, wherein there is no story, no content, no action, no language. In absolute zero, only code remains, paradoxically subsisting through '0' itself.

9. '(–) hierarch outdex' and back cover

The hierarch outdex is a reverse view of the hierarch index, while the back cover is a reverse view of the front cover. The word 'outdex' makes us reevaluate the 'index' at the beginning of the *Ark*, as signifying not only the 'table of contents', but as positioning the 'index' as an indexical trace of the book as a whole. The outdex, then, does not point to something. The outdex points away from the book, in a sense projecting or ejecting the reader from its very pages. The back cover functions similarly, with the added pleasure of exhibiting the ISBN barcode for point-of-purchase sales. Upon finishing the book, one cannot help but view the barcode as part of the work itself. The *Ark* can serve as a floatation device, bearing the reader up above the treacherous waters of commercial publishing, while simultaneously taking part in the same system of commerce. This is a great paradox of *Ark Codex* ± 0 . If we use it as a floatation device, it amounts to 'throwing the ark out with the floodwater'.

II. THE MATERIAL

While from the first perspective I focus on the 'matter' of the book, in the second perspective, I focus on the 'material' of the book. This perspective largely considers the processes of production and distribution. It is not necessarily a secret that the *Ark*, while officially authorless, is a product of the publisher of Calamari Press, Derek White. As White said in another interview, 'It's not hard to figure out who the "author" is, it's more that I just wanted to de-emphasize the role of author and give the reader more credit' (Tyler 2012). White did not so much write this book as assemble it, remixing materials including encyclopedias, nineteenth-century tomes of biological science, and even the famous album cover of Joy Division's 'Unknown Pleasures', an image which, as we see in a video showing the production of *Ark Codex* on the Calamari website, White has tattooed on his forearm. While you can purchase the book for \$40 on the Calamari site, a PDF of *Ark Codex* is also available at a 'pay what you want rate'. *Ark Codex* is a remix with multiple channels of distribution. It is not so much a text you read, but a text you encounter, a text you can encounter in multiple ways.

Ark Codex ± 0 in its book form, that is, its codex form, is very much the result of print culture, a concept as proposed by Lisa Gitelman. Gitelman (in press: 2–3) argues that in the digital age scholars have been 'focusing attention on non-codex forms', largely consisting of digital documents characterized by 'impermanence or ephemerality'. Such technological innovation has allowed us to look upon the codex with fresh eyes. She defines the codex as 'a text in the shape of a book [...] groups of pages gathered and sewn together in order to open along their fore-edge' (Gitelman in press: 1). With the form of the codex having been denaturalized in the context of digital texts, we can now look upon it as a thoroughly 'material format'. In order to get a better sense of material of the codex, Gitelman (in press: 2) advocates evaluating it in terms of print culture, which 'is at least the culture of printers', and is characterized by 'emergent social and economic norms that [...] structure printers as a class of actors in relation to other actors: authors and booksellers, yes, but also institutions like the church and state'. Compared to digital ephemera, codices, the objects produced by print culture, are 'sluggish and stable, [...] slow to bloom, as anyone will admit who has ever tried to write and get one published' (Gitelman in press: 3).

The Calamari Press exhibits a strong print culture, conscious of the production of material books in an age of digital ephemerality. Its website features the entire catalogue for sale, print-on-demand, each title with its own webpage offering artful descriptions of the book, hyperlinks to interviews with the authors and selected artwork. Many of these pages, including the one for *Ark Codex*, feature 'moving image book trailers', offering thematically related video art produced for the site. The webpage of *Ark Codex* features a montage showing the process of constructing the book. We see an old typewriter in close-up, pounding away and White's hands etching with charcoal upon the page of an old biology book. Close-ups of various pages in *Ark Codex* flicker in and out of focus, evoking the confusion of one's first encounter with it. Tellingly, the camera stops upon a piece of scotch tape, its edges blackened from ink and charcoal, its material presence letting us know that we are witnessing how the book is barely held together. Throughout the video, shots of the original artefact are exhibited, the singular original codex compiled in all its wet ink, chunky texture and multimedia composition. These shots are

intercut with close-up shots tracking across the smooth, dry surface of the printed page, the page that will be delivered to your door for \$40. This video is not just about the production of *Ark Codex*. More broadly, it addresses the physical labour of printing a thoroughly material cultural artefact, the basis of print culture in any sense of the term.

While the Calamari Press is officially a for-profit outfit, it does not make much. As White says, 'Obviously I didn't start a small press to make money, I don't think anybody in their right mind would' (Tyler 2012). White is in a sense a self-publisher, the Calamari Press a sort of vanity project. From this perspective, White descends from a long tradition of American bookwork. Leah Price (2009: 484) traces this tradition back to Benjamin Franklin, as 'signed volumes' from his press 'took the form of what he called "book-work," and we call vanity publishing'. Price argues that in the digital era, 'when the blog might be expected to render self-publishing obsolete, the web (in the form of Amazon.com) has instead encouraged the growth of vanity presses'. Indeed, White says, 'The primary book object is the physical paper book', even though he realizes that 'in the past 10 years people have expected to get art – music, movies & books – for free' (Tyler 2012). Because *Ark Codex* uses so much colour, White notes that it is expensive to print, and fixed the \$40 price 'based on the production costs' (Tyler 2012). Knowing that much of his prospective readership might not be able to afford a print copy, White offers a PDF at a 'pay-what-you-want' rate, influenced by the success of Radiohead's 'pay-what-you-want' release of their album *In Rainbows* (2007). White remarked that since he put up the link for the PDF version, 'over 6500 people have downloaded it so far & 0 people have paid-a hard business model to sustain' (Tyler 2012). While White asserts that the paper bound book is the 'primary object', we would be remiss not to account for, if not outright privilege, the digital version. It seems that practically speaking, one could argue persuasively that the PDF is in fact the primary object based upon the degree of its use alone.

White's vanity press situates itself firmly as a codex-maker in a time of digital production by privileging the book form over the digital file, while simultaneously fostering a print culture through digital paratexts (in the form of the Calamari Press website) and by offering a cheaper (or free) PDF of each title. Even though White laments the amount of people downloading the PDF of *Ark Codex* for free (they don't consider the implications of what the lack of support will do to the quality of art), he says he is 'happy to have more readers', because 'that's what's important in the end' (Tyler 2012). In the print culture of the Calamari Press, the digital file has not replaced the codex; it is simply available as another, albeit lesser, form. This is an instantiation of another conclusion by Price (2009: 485), who writes, 'Digital media aren't replacing the book [...] the screen has no more power to topple the book from its symbolic pedestal than did the ledger, the newspaper, the mimeo, or the photocopy'. This perspective is certainly valid within the context of a print culture, at a print culture's relatively small scale and rarefied demographic. This conclusion, however, becomes problematic when the scale of analysis is increased to account for readers at large. It is hard not to conclude, considering the vast amount of people who downloaded *Ark Codex*, that the PDF has indeed replaced the codex, at least in the case of the *Ark*.

Alan Liu considers the fate of the book from this larger scale, arguing that 'the digital makes large forms in *general* go away [...] because the digital subordinates books, films, music, and anything else to a focus on *documents*

(or, equivalently, files)' (2009: 503, original emphasis). He describes the document paradoxically as a deformational form. Liu writes,

On the one hand, documents conform to strict rhetorical and technical protocol – standard salutations ('To,' 'From,' 'Re,' 'cc'), paper sizes, data or transmission formats, and so on. On the other hand, documents are deformational because they atomize molar structures into modular, remixable components geared to industrial efficiency and postindustrial flexibility. From the invention of the vertical file and Frederick Winslow Taylor's work-process forms to today's computer files and folders, the document is of a piece with the great digital dissolve that now unbundles such aggregated forms as *albums*, *shows*, and *books* into tracks, clips, samples, and other modular ejecta perfect for such reaggregators as iTunes or Google.

((2009: 504–05, original emphasis)

Ark Codex is an exemplary 'document', or deformational form. The PDF form is obviously a document or file, both conforming to 'technical protocol' and 'transmission formats', while also 'remixable' and 'modular' by virtue of its very digitality. More interestingly, the paper bound form of *Ark Codex* also displays the telltale attributes of the document. As a material product of a printing press, it must adhere to technical and professional standards, such as 'paper sizes'. The aesthetics of the book highlight White's compositional strategy, that of turning the 'molar structures' of previously published tomes and the fable of Noah's Ark into 'modular, remixable components geared to industrial efficiency and postindustrial flexibility' (Liu 2009: 504). If this is the case, then *Ark Codex* was never a 'book' at all. And if *Ark Codex* was never a book at all, we can ask a question of it, a question Liu (2009: 511) asks more generally: 'If the book goes away in the digital age [...] then whither bookishness – meaning, roughly, the idea, psychology, sociology, value, and culture (if not also cult and religion) of the book?'. The next section attempts to explore some possible answers to this question.

III. THE MATERIALITY

While the first perspective focuses on the 'matter' or contents of the book, and the second focuses on the 'material' production and distribution of the book, from the third perspective, I examine the 'materiality' of the book. Materiality foregrounds an embodied production of meaning. My understanding of embodiment is very much influenced by Paul Dourish, who adopts a phenomenological approach to examine what it means to say that an artefact is interactive. Dourish writes, '*Embodiment is the property of our engagement with the world that allows us to make it meaningful*' (2001: 126, emphasis added). There is no definite distinction between the mind and body, or, in Descartes' terms, the *res cogitans* and *res extensa*, respectively. We can apply this model of embodiment to the book, and claim that for *Ark Codex* the matter (or contents, the *res cogitans*) is not divorced from the material (or production and distribution, the *res extensa*). (In other words, I have separated the matter from the material for the heuristic purpose of clarity, even though the production and distribution of a book is always part of its contents, and vice versa.) Since embodiment requires an engagement or an encounter, Dourish goes on to say, '*Embodied Interaction is the creation, manipulation, and sharing of meaning*

through engaged interaction with artifacts' (2001: 126, original italics). Here, the reader as material witness comes into play, encountering the book, interacting with it in the production of meaning.

The materiality of *Ark Codex* hails the reader into a feedback loop of reading, both through its paradoxical matter and its paradoxical material. Derek White himself describes the encounter with *Ark Codex* in terms of the feedback loop: 'It's like looking up "dictionary" in the dictionary only to find it's what you're holding in your hands' (Butler 2012). He goes on to add, 'In fact, I had originally planned to print the book so it had two covers, with both directions meeting in the middle, effectively endless' (Butler 2012). But in this phase of the analysis, I should stop quoting White altogether, for the book itself officially has no author. The anonymity of *Ark Codex* emphasizes the role the reader plays in interacting with the artefact per se in the production of meaning. The Calamari Press's website says, 'It is the reader's role to attribute meaning - *Ark Codex* is merely a rorschach sounding board to project the viewer's potential, a reader who (like *Ark Codex* itself) is but a mere embedded fragment of our collective unconsciousness, but in a holographic sense mirrors the whole & takes on a life of its own'. *Ark Codex* as a material artefact is equated with the reader as an embodied witness. The artefact is self-referential, its pages meaning that which you hold in your hand; likewise, the reader projects his own potential onto the Rorschach cipher that is *Ark Codex*. A thoroughly embodied process of interactivity is fostered, wherein the book is the body and the body is the book.

The sort of bookishness that *Ark Codex* fosters rests upon establishing a dynamic through which unrelated objects can interact with each other. In this sense, we can say that the bookishness fostered by *Ark Codex* functions by means of protocol, or that *Ark Codex* elicits from the reader (or, perhaps, the reader elicits from *Ark Codex*) a protocological disposition. Eugene Thacker (2004: xx) writes, 'From the perspective of protocol, there are no biologies, no technologies, only the possible interactions between "vital forms"'. Protocol acts as a bridge, offering the means of negotiation between dissimilar objects, rendering their differences equivalencies, at least in terms of communicative interaction. And as any negotiation is inherently political, Thacker (2004: xx) concludes that protocol, through bridging vital forms, 'can also be called biopolitics'. To encounter *Ark Codex*, to engage with it, is a biopolitical act, as the negotiation of book and body and body and book sutures the reader (and the book) into a reflexive circuit of influence and resolution.

The biopolitical aspect of protocol, as well as the feedback loop of *Ark Codex*, depends on the technical concepts of layering and portability. Thacker (2004: xxi) describes layering as 'a central concept of the regulation of information transfer' that can bridge life and information technologies, or the 'biological and the political', respectively. In terms of IT, layering 'allows data to find its way into the correct application on your computer' (Thacker 2004: xxi). In terms of the biological, Thacker invokes the human genome. He writes (Thacker 2004: xxi), 'A signaling pathway between two proteins is layered into a disease predisposition pathway genome, which is layered onto a genome database, which is layered onto a statistical and demographic record of disease occurrence [...]'. While the layering of Internet protocol allows me to download the PDF of *Ark Codex* through my Adobe Reader application, the aesthetic of that document itself is based on the layering of maps upon math upon genome upon charcoal and ink and plastic and paint.

4. J. A. Tyler (2012), who interviewed Derek White, describes his experience reading the pdf of *Ark Codex* in terms of its 'scrolling'. He writes,

At one point, I held my finger on the 'page down' key and let the images of *ARK CODEX* scroll by, and it added up to a kind of strange movie that in fact does tell the 'story' of the text, only in a different way.

(Tyler 2012)

5. As Mak indicates, 'The placement of images on the page ... is a sign from designers about the value of the illustrations and how they are meant to be read' (2011: 17). *Ark Codex* disrupts this tradition.

The densely layered aesthetic of *Ark Codex* challenges the reader on every page, rendering 'the act of reading [as] a power struggle between reader and page over the dominion of the text' (Manguel 2010: 120). Alberto Manguel (2010: 120) describes the page as 'a skeleton supporting the skin of a text', for the page has been naturalized, and therefore rendered invisible, for a long time. In this biopolitical struggle, Manguel (2010: 120) concludes, 'Usually, it is the page that wins', due to the fact that traditionally the page structures the actions of the reader. He writes, 'Like the changing numbers of an electronic clock, the pages mark the numbered hours, a doom to which we, the readers, are called to submit'. As he does note, however, 'Electronic reading alters certain parameters' (2010: 126). Manguel (2010) goes on:

Reading on the screen precludes (up to a point) the time-restricting quality of reading on paper. The scrolling text (like that of the Roman or Greek scrolls) unfurls at a pace that is not dictated by the dimensions of the page and its margins. In fact, on the screen, each page shifts shape endlessly, remaining the same in size but altering its content, since the first and last line keep changing as we scroll, always within the fixed frame of the screen. Though reading a long text on the screen is thoroughly inconvenient (for physiological reasons that may, no doubt, change as we evolve), it does free us (if we want to be freed) from the very temporal realization of progress illustrated by the thickening bulk of pages held in the left hand and the diminishing bulk of pages held by the right.

Encountering the PDF of *Ark Codex* clearly fits Manguel's model of electronic reading, an act that paradoxically hearkens to the ancient act of reading from a scroll.⁴

The page is still a structuring principle of *Ark Codex*, even in the scroll-like PDF. As Mak (2011: 12) tells us, scrolls were demarcated by means of *pagina*, or unitary blocks of text, that served 'as a conceptual structure by which information could be organized'. In terms of the scroll, the codex, and even the PDF, the 'page is a powerful interface between designer and reader, flexible enough to respond to a variety of demands while remaining comprehensible and communicative' (Mak 2011: 1). The freedom allowed from surveying the *pagina* of the PDF can be found in the codex version of *Ark Codex*, too, due to the aesthetic of layering and the book's protocological disposition. Upon encountering the page of the codex version, one does not know how to read it, as there is no linear presentation of language to guide the reader's eyes. Does one read the caption first, a caption that, at first blush, is seemingly incomprehensible? Or does one examine the artwork first, for after all, it is the 'illustration' that is positioned front and centre?⁵ The reader must make decisions, negotiate with the codex, in order to find a procedure of reading that renders the *Ark* in some way legible. In negotiation with *Ark Codex*, the reader must develop a protocol that helps the information make it to its proper application.

The second aspect of protocol upon which the biopolitical aspect of *Ark Codex* depends is portability. Thacker (2004: xxi) defines portability as the 'ability to enable software and files to operate across different proprietary standards'. Portability allows information to be accessed from different objects. Portability, then, is very much a concept of embodiment. Thacker's example demonstrating the significance of portability makes this quite clear. He writes:

If the biological body is the genetic code, and if the genome is a kind of computer, then it follows that the main area of interest for portability will be between the biological body of the patient and the informatic body of the computer database'.

(Thacker 2004: xxi)

Portability not only allows one access to *Ark Codex* from both a PC and Mac, but, more metaphorically, portability influences the material of *Ark Codex*, its production and distribution, its existence in paper and PDF. Thacker (2004: xxi) concludes, 'The key to success will be the portability between two types of genetic code: one in vivo, one in silico'. The reader who encounters *Ark Codex* in its fullest sense experiences a new sort of disorientation resulting from this portability, endlessly travelling a circuit *in vivo* to *in silico*, and back again. This does not simply mean that the reader encounters both the codex and the PDF; more importantly, it means that, as a body programmed by genetic code, the reader must become portable in order to construct meaning with this interactive and embodied text.

Altogether, a feedback loop constitutes the materiality of *Ark Codex*, for the protocological disposition of the text requires that the reader construct meaning through an embodied, self-conscious, two-way data transfer. This sort of materiality renders both the reader and *Ark Codex* as thoroughly cybernetic organisms. If a protocol emerges between the reader and the text, meaning is produced, resulting in a bookish interaction of homeostasis. Katherine Hayles (1999) can help us think through the relationship of the feedback loop, cybernetics and literature. She begins by situating the body in parallel with the book, in terms of both phenomena's relationship to information. Hayles (1999: 28) writes, 'Like the human body, the book is a form of information transmission and storage, and like the human body, the book incorporates its encodings in a durable material substrate'. This observation is possible within a cybernetic paradigm, which explores the operation of (self-)regulatory systems. In its originary context, cybernetic theorists conceived of the human body 'as an input/output device', always situated in relation to technology 'in the middle of the circuit, where his output and his input are already spliced into an existing loop' (Hayles 1999: 68). The human body subsists within a feedback loop, 'explicitly theorized as a flow of information' (Hayles 1999: 68) that acts to maintain homeostasis. Recall that in port folio 0: 1 of *Ark Codex*, organisms known as dicebats fly out from the newly evolved 'i/o' hole, a cavity containing both a tongue and an ear. The dicebats, or those who have always already been speaking, leave binary code in their wake. With this in mind, both the reader and *Ark Codex* are i/o holes themselves, and the meaning that results from the materiality of the text is embodied in the dicebats, whose randomly littered 1s and 0s can code meaning infinitely. *Ark Codex* becomes a powerful technology that can, in the words of Mark Hansen (2006: 26), 'lend support to a phenomenological account of embodiment and expose the technical element that has always inhabited and mediated our embodied coupling with the world'.

REFERENCES

- Anon. (2012), *Ark Codex ± 0*, New York: Calimari Press.
- Butler, B. (2012), 'Here is a book that wrote itself', <http://www.vice.com/read/here-is-a-book-that-wrote-itself>. Accessed 7 January 2013.

- Calamari Press (2012), 'Ark Codex \pm 0', http://www.calamaripress.com/ark_codex.htm. Accessed 7 January 2013.
- Dourish, P. (2001), *Where the Action Is: The Foundations of Embodied Interaction*, Cambridge: MIT Press.
- Gitelman, L. (in press), 'Print Culture (Other than Codex)', in K. Hayles (ed.), *Comparative Textual Media*, Minneapolis, MN: University of Minnesota Press, pp. 1–7.
- Hansen, M. (2006), *Bodies in Code: Interfaces with Digital Media*, New York: Routledge.
- Hayles, K. (2002), *Writing Machines*, Cambridge: MIT Press.
- Hayles, N. K. (1999), *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, Chicago: University of Chicago Press.
- Kirschenbaum, M. G. (2008), *Mechanisms: New Media and the Forensic Imagination*, Cambridge: MIT Press.
- Liu, A. (2009), 'The end of the end of the book: Dead books, lively margins, and social computing', *Michigan Quarterly Review*, 48: 4, pp. 499–520.
- Mak, B. (2011), *How the Page Matters*, Toronto: University of Toronto Press.
- Manguel, A. (2010), *A Reader on Reading*, New Haven: Yale University Press.
- Price, L. (2009), 'Reading as if for life', *Michigan Quarterly Review*, 4: 4, pp. 483–98.
- Thacker, E. (2004), 'Foreword: Protocol is as protocol does', in R. Galloway (ed.), *Protocol: How Control Exists after Decentralization*, Cambridge: MIT Press, pp. xi–xxii.
- Tyler, J. A. (2012), 'Interview /// Ark Codex \pm 0', <http://monkeybicycle.net/blog/708/>. Accessed 7 January 2013.

SUGGESTED CITATION

Malčić, S. (2013), 'In vivo, in silico: Ark Codex \pm 0 and the vital forms of bookwork', *Book 2.0* 3: 1, pp. 45–60, doi: 10.1386/btwo.3.1.45_1

CONTRIBUTOR DETAILS

Steven Malčić is a doctoral student in the Department of Film & Media Studies at the University of California, Santa Barbara. His research focuses on information infrastructures, digital identity and media historiography.

Contact: Department of Film and Media Studies, 2433 Social Sciences and Media Studies Building (SSMS), UC Santa Barbara, Santa Barbara, CA 93106-4010, USA.

E-mail: malcic@umail.ucsb.edu

Steven Malčić has asserted his right under the Copyright, Designs and Patents Act, 1988, to be identified as the author of this work in the format that was submitted to Intellect Ltd.

Copyright of Book 2.0 is the property of Intellect Ltd. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.