

# Review of: "[Essay] The Algorithm; Mind of a Virtual Era – Our Code of Codes"

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**Potential competing interests:** No potential competing interests to declare.

This essay takes a broad sweep through different perspectives on algorithms, including historical origins, recent experience with decision making platforms, writing by computer scientists for a popular audience, and the relationship between algorithms and culture. It is written in a romantic and impressionistic style. Touching on an ambitious range of material, it uses work by Barbieri on biosemiotics and “eras of code” to argue we have entered an era of computational / algorithmic codes.

This draft is ok, and the author is clearly a skilled writer, but I wonder if the essay really achieves its goals. This is, I think, separate from my disagreement with some of its key positions. If the form is that of a broad, sweeping essay, it shouldn't assume readers are familiar with specific texts in biosemiotics, like Barbieri. If it is a more specific contribution to biosemiotics or semiotics, it should be closer to the house style of that field. Assuming the former, Barbieri should be introduced more completely, so readers have a better sense of what a new Barbierian era is supposed to be. Similarly, the author seems to have in mind a fairly specific definition of “algorithm”, but in the context of a humanistic essay, the definition is very much a matter of misunderstanding and dispute, and used by different authors in mutually incompatible ways. Sometimes the essay seems to be talking about recipes, sometimes about mathematical abstractions that separate reusable software components, and sometimes sociotechnical decision making in platforms like Uber, and sometimes just any computer program, using more or less the naive definition from in each context.

On specific sections, I'm not sure that the words spent on information history quite pay off, when it has the journalistic structure of “beginning of time” - “start of field” - “now”. I suggest either trimming it or filling it out to cover more of historical computing, if you can make it serve the overall argument.

The section on contemporary popular accounts of algorithms by leading computer scientists, particularly Pedro Domingos, is actually pretty funny. But the jokes don't quite land as well as they might, because like a lot of this essay, this section tends to assume the reader has also read all of these books. A little more recapping, informed by the way a literary book review works (eg the New Yorker, LRB etc), would go a long way.

The section on Algorithmic Culture would benefit from familiarity with the scholarly debate in anthropology and HCI in recent years. The entry texts here are probably Seaver (2017) - Algorithms as Culture, and the work in communication with it, and the “critical algorithms” reading list (details below). The bullet points at the end of the culture section don't work for me. They may be intended as an abrupt switch in rhetorical style that wakes up the reader. To me they just read like the same complaints that everyone makes nowadays about spending too much time on their phone checking Facebook.

After all the belle-lettristic effort earlier in the piece, they read like they are in bullet point form because they are underthought clichés, not because they are a crisp summary of points from elsewhere in the essay.

The last section uses a lot of scare quotes around established jargon like ‘neural nets’, and a lot of exclamation marks. But these feel like a substitute for an argument not made. The missing argument appears to be about computers and AI, simulating intelligence / sentience / consciousness rather than having actual intelligence etc. Ok, it’s a familiar debate (Chinese Room, Emperor’s New Mind, etc etc), but it is still better addressed up front. The Stanford Encyclopedia of Philosophy can be your friend here. The position argued appears to be a more sophisticated one than usual, about how closely and cybernetically tied the material basis is to information processing in the human body, giving a unique platform not found in modern computers. So introduce that idea more clearly earlier, walk the reader through it, so it can pay off in this last section. There is a bit too much exclaiming that alternative positions are obviously dumb, too. These changes do not necessarily mean changing the exuberant prose style: it is, still, more or less, the way Deleuze and Guattari’s books work, and when they need to introduce a tangle of multiple elements at once, they say so.

In summary, introduce the load-bearing elements of theory carefully in a way that teaches those unfamiliar with them, and shows how you are using them to those familiar with them. The most crucial is Barbieri’s semiotics, which could almost use a whole intro subsection, but this also applies to some of the key texts being analysed and concepts used. Reapply the theory through the essay, tying it together. In writing a literary essay using beautiful language, pay attention to lapses out of that style (bullet points, scare quotes, exclamation marks). Are they purposefully deployed rhetorical devices, or tells that indicate weak points in the argument? In its current form this essay is readable enough and pulls together some interesting ideas, but redrafting along these lines will make it much stronger,

Copyedits and other details:

Tech-takeover section

To inform us of the race for an all-knowing, supreme algorithm, that learns from other algorithms, there is no one more committed and impassioned to remake our world than award-winning, computer-scientist, P. Domingos (2015). -> just use his name so the sentence is readable, and tack the citation onto an introduction of the title of the book in the next sentence

A lot of exclamation marks in this section.

...

“Above its utmost tower flies a black and red flag, with a five-point star.”

...

I had fled this citadel through the Gate of Utter despair -> Gate of Utter Despair (caps) (funny line btw)

..

Most features of human cognition cannot be quantified; they are part of human intellection into which converge perception, attention, emotions, and meanings, accrued via layers of constant new sensorimotor learning experiences, far beyond fixed calculations but, perhaps, not beyond the efficacy of codes in storing memories. -> this is too bold for a bare assertion, bring it from somewhere in the lit. Second half of sentence unclear

Gallistel (2020), a controversial, avanguard neuroscientist -> avanguard -> "avant garde" or "a vanguard"?

...

No algorithm will ever 'develop' as we do, from biological origins, with tight-knit sensori-motor-emotive cognitive faculties. -> isn't this true by definition, because an algorithm is an abstracted mathematical procedure?

Algorithmic Culture section:

N.Weiner, 1950,46 -> formatting issue? Or is this a particular citation style?

Seaver, N. (2017). Algorithms as culture: Some tactics for the ethnography of algorithmic systems. Big data & society, 4(2), 2053951717738104.

<https://socialmediacollective.org/reading-lists/critical-algorithm-studies/>

"We have become a species of information mongers" -> great line

Like the Pide Piper of Hamlin -> Pied Piper

Our Time section

I don't think it is necessary to capitalise Chatbots or Bots

"This imposter-interlocutor has been created and digitized into an algorithm by a 'programmer' who knows what children like" -> this is hard to understand without an earlier definition of algorithm, and the "programmer" double meaning needs drawing out

Interface with computers is to employ a tool that conditions us -> \*To\* interface with computers ...

Anthropocene -> Anthropocene

Weirder becomes the next best thing. -> Adj / noun confusion on weirder

"The introduction of an innocent code has, once again, altered the course of human evolution manifesting Barbieri's macro-evolutionary theory claiming that broad evolutionary shifts are marked by the advent of new codes: to the molecular, neural, and cultural codes, we can now add the 'computational' – a world created by the algorithm."

-> This last sentence for the essay is a mouthful, and slightly ungrammatical.

-> the grammar can be fixed by adding "and" between "theory" and "claiming"

-> style-wise, the callback to Barbieri should be unnecessary. End on your own work

-> the colon would be better replaced by a full-stop and new sentence