**Image Captions:**

Image 1: Layout of IF & ONLY IF web page

Images 2-5: IF & ONLY IF output sketches, using scanned historic papers overlaid with generated headlines (2020).

**Crash Blossoms / IF & ONLY IF: A Lo-Fidelity AI Newspaper**

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*Crash Blossoms / IF & ONLY IF* is a playful new online work made in collaboration using a kind of artificial intelligence called recursive neural nets (RNN) to synthesise past-present-future headlines by combining the news archive at the British Library with user contributions. It was first shown as part of Leeds Digital Festival on 24 September 2020, and is available at torquetorque.net/crashblossoms. The project’s title *Crash Blossoms* is taken from the name for instances where ‘headlinese’ produces a weird semantic ambiguity, like ‘McDonald's fries the holy grail for potato farmers’. In this essay, we discuss how the relatively transparent, small data approach used in *Crash Blossoms* can offer a different trajectory, away from singularity and towards multiplicities of human and machine intelligences.

The *Crash Blossoms / IF & ONLY IF* web page draws stylistic cues from print newspapers and online news sites. New sets of headlines were generated daily by an AI trained on a mixture of nineteenth-century and recent headlines lifted from British newspapers accessed via the British Library archive and imaginary headlines uploaded to the site by users. In its default state, headlines emerge in a blank text box, akin to how text is written from the ‘insertion point’ on a word processor. These animating headlines cause the html to flow unceasingly, stretching and shrinking sections, bumping words to the following line and creating new aleatoric combinations of headline and body text. As such, the piece is durational, with many cycles interacting according to their own temporal demands. The long life-cycle of creation, classification, maintenance and disposition of data is reflected in the rapid destruction and recreation of the headlines and the infinite scroll of the ticker-tape at the base of the page.

Rather than ‘big data’ power, the plodding IF & ONLY IF headline generator is trained on a series of small sets of examples that you can read and digest for yourself on the webpage. The inference that you might compare input and output of our RNN is intended as a pedagogical, critical tool regarding an often glorified technology. The low-fidelity language spat out by our RNN and its setting in the IF & ONLY IF page reveals and obfuscates some of the unknowables of AI. We reveal partial sources, poison others, employing behind-the-scenes magic and front-of-house announcements for a stage set with a troupe of varied actors.

The rest of this short essay discusses the role of ‘headlinese’ as a textual unit that derives its style from its enmeshment in the media apparatus resulting in a uniquely odd diction, ‘fidelity’ as a term to describe the relation of AI authored things to their human equivalents, and ‘data-poisoning’ as a method for degrading fidelity in return for speculative or data-critical outputs.

## HEADLINESE

The style of the headlines in for IF & ONLY IF is developed around a particular form of language called ‘headlinese’ – the odd phrasing of headlines that have undergone media morphosis in the linguistic niche of the newsroom, print and online media sphere. Headlinese performs how news is becoming increasingly participatory and automated, forming a lineage of language corruption. The history of headline writing contains the seeds of the hyperbolic language that defines so much online news and communication today. Whitney Phillips has written that news algorithms act as editors that ‘incentivise certain types of sensationalist content … [whereby] it is simply not the case that all voices carry equally on social media; or that all information carries equally’.[[1]](#endnote-1) As we have seen again and again, in AI applications, not only do algorithmic decisions amplify existing inequalities, but they performatively reproduce them. In this case, the best performing stories develop an audience. The audience demands the stories that require an audience and so on, performing recursive loops, not unlike those in a neural net. AI and the news are kindred spirits thriving on difference and repetition.

How we experience the news today is inherently open to revision and the concision of the automated and user-generated headline – so much so that we are all variously working or lurking in a global newsroom, gabbling headlinese. Forwarding, retweeting, commenting, hashtags and memes have collectively produced this catch-all news-speak that is in a constant process of mutation and self-replication. In the new world of citizen journalists and freedom to publish in an instant, misinformation can spread online like wildfire, breeding and legitimising conspiracy theories and ushering in a ‘post-truth’ age. However, within this ambient glut, we find the promise of a deconstruction of the notion of a primary source among various temporally and conceptually distant alternative sources.

Like newsroom hacks, we revelled in remixing the venerable British Library news archive with the more silly, hyperbolic headlines of the contemporary and the imagined to titillate our audience. As Michel Foucault wrote, the archive, like the news, prioritises certain voices and ‘defines at the outset the system of its enunciability’.[[2]](#endnote-2) In our small experiment, we used the text box of the headline as a kind of portal to play with the temporal limits of enunciability, inscription and ideological constraints of news and the archive. By enabling visitors to the site to add their own headlines and see how the RNN processed these and generated new headlines, we were also trying to create an opportunity for audiences to experiment with and observe AI technology first hand, in the making.

## AI FIDELITY

The fact that the site resembles print newspaper renders it a ‘skeuomorphism’, a term used to describe digital tools that resemble analogue comparisons, commonly recognised as lousy design practice. However, although our skeuomorphic website resembles a newspaper, it frustrates any attempt to read it as such: the columns on the page move and contain untimely combinations of theory and cut-up text. The headlines authored by the AI[[3]](#endnote-3) are a strange jamming of old and new languages corrupted by the misspellings and syntactic misplacements that are the result of its ‘small-data’ resources. Though published some months ago, IF & ONLY IF’s ‘crash blossoms’ are an example of the projective, predictive quality of data-based AI, resulting in phrases that are *newsy*, and *new,* but not news.

The skeuomorphism and untimeliness of IF & ONLY IF raises the question of *fidelity*. IF & ONLY IF’s outputs are low-fidelity: it types out headlines that are infested with the textures of the glyph-scale text-sampling of the RNN and gestures vaguely at the space triangulated between past, present and the future proposed by its data-set and users. As with any far-distant object, the view this headline affords us of its between times is impoverished and blurry. However, if you squint, there is something there to see.

Fidelity has fallen out of fashion to describe the degree of a media realism in something. This is a shame because it combines several linked issues relating to AI ethics in a way that synonymous terms such as ‘resolution’ do not: namely, how the believability of the AI’s output (how passably human it seems to us) relates to its faithfulness to the data-set (usually based on the layers of training that have taken place), and the level of definition or scale achieved (how big, smooth, or shiny the output is). Our new headline language demands our faith in it precisely because it fails to be human; instead, it is delightfully promiscuous and dupable in what it might represent, and ambiguous as to its scale and scope. Fidelity as believability, faithfulness and definition in AI-generated art does not have a simple relationship to ethics. Still, we could say, along with Hito Steyerl’s commentary on the poor image, that the hi-fidelity AI output is ‘brilliant and impressive, more mimetic and magic … more rich’, whereas the ‘poor’, imperfect lo-fidelity AI image contains a more militant, affective potential, and carries less baggage.[[4]](#endnote-4)

In language, the issue of fidelity is perhaps even more complex than with the image. The sheer quantity of data used by GTP-3 (in effect, everything written online, accessed via the Common Crawl service, plus content from digitised books), means that the output is both more believable, less specialist, and less error-prone than visual versions of the technology. As well as the apparent dangers of phishing, impersonation and other scams, temptation for commercial copywriters and lazy authors will surely be too much to bear, and we will be drowned in linguistic simulacra, faithful, stale reproductions of the written as-it-was at the beginning of the twenty-first century.

## POISON AND DIVINATION

Seeking to avoid this repetition of the same, as well as synthesising the statistical possibilities of historical sets of headlines with more contemporary examples, we train IF & ONLY IF on its own errors. This is what we call ‘poisoning’ the set, but we might also think about it as bringing the archive back to life. It obscures and distorts the ‘truth’ of the archive by presenting a range of possibilities that is between and beyond it. Though the texture of its historical sources still shaped the outputs you see, their content became an increasingly distant memory over fourteen days of its first ‘volume’, published during Leeds Digital Festival 2020, distorted by the likelihood of letter-combinations such as ‘coro’, ‘trum’, ‘brex’, ‘ai’ that dominate today’s headlines and vernaculars. Because there is no corrective mechanism, the process does not increase accuracy but rather opens up the field of possibility and disorder, exchanging fidelity for possibility. In a sense, the headlines that IF & ONLY IF authored can be thought of as a form of historical fiction, framed by humans but realised by machinic logic. The neologisms (new-words, new-logics) that the generator makes are therefore not only intended as speculations on the future but of the imagined gaps in the archive. What could have been left unsaid?

As a character in Stanislaw Lem’s *The Futurological Congress* observes: ‘By examining future stages in the evolution of language we come to learn what discoveries, changes and social revolutions the language will be capable, some day, of reflecting.’[[5]](#endnote-5) In ‘When Making Becomes Divination’, Betti Marenko observes similar potentials in contemporary design practice. Marenko asserts that a glitch is an event that ‘reveals the potential of the digital in processes of computational making’.[[6]](#endnote-6) The IF & ONLY IF algorithm is trained on such moments in its own language glitches; it is encouraged to make errors that articulate its own potential. Our news headline generator is like experimental fiction and speculative design because it seeks and finds imaginal possibility in its lack of fidelity to now, exchanging this for a grasp on what is to come. Following this, we ask: if and only if *the future = (the past + the present ) x entropy*, then might the lo-fi headline operate like a time machine: an active agent of transformation?

Alongside the creative potential of a glitch, there exists its counterpoint: predictability and fit. Our approach works hard to find a ground of possibility through the performance of a familiar style. We put the news archive of the past into estranged dialogue with its present and future, using the peculiar characteristics of AI text-generation software as a tool to mediate relations. It aims to create an experience for readers that is at once familiar and strange: familiarising audiences with some aspects of the process-source relation and estranging the default language of headlines.

As artists, we are not interested in knowledge navigation tools that assert ‘control and mastery’ of the informational and linguistic excesses of today. Instead, we maintain a kind of freedom through the misappropriation of the skills of our profession and those parallel to ours in the media industry. In this specific misuse, we hope the work opens onto several questions: what is the inner life of language as it twists between web and archive empires? How do words create worlds? How can we overload information with acts of recuperation? How might our future survival depend on our ability to crash blossom with machines?

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1. Whitney Phillips, 2018. *The Oxygen of Amplification*. Data & Society, https://datasociety.net/library/oxygen-of-amplification/ [↑](#endnote-ref-1)
2. Michel Foucault, *The Archaeology of Knowledge* (London: Routledge, 1969), 129. [↑](#endnote-ref-2)
3. The AI we used is Torch-RNN, an open-source recursive neural net for torch7 using character-level language modelling similar to [char-rnn](https://github.com/karpathy/char-rnn). <https://github.com/jcjohnson/torch-rnn>. [↑](#endnote-ref-3)
4. Hito Steyerl, *In Defense of the Poor Image*, E-flux.com, 2009, https://www.e-flux.com/journal/10/61362/in-defense-of-the-poor-image/. [↑](#endnote-ref-4)
5. Stanislaw Lem, *The Futurological Congress* (Tel Aviv: Schocken, 1981). [↑](#endnote-ref-5)
6. Betti Marenko, ‘When making becomes divination: Uncertainty and contingency in computational glitch-events’, *Design Studies*, 41, 2015: 110–25. [↑](#endnote-ref-6)