Contingency: Thinking Through Assemblages in a Posthuman Vein

Ami Clarke

Abstract:

The Leveson enquiry in the UK (2011–12) made something visible that many had suspected for a very long time: that politics was caught up in far too cosy relations between the politicians, the press, and the police, pouring doubt upon anything that might amount to a free press. The drift online, though, provided further layers to this, and I followed the move from paper to digital news reportage, and the subsequent changes to not only the 'form' of the news, the tempo and the style, but how these combine to inflect what it is even possible to say, to whom, and by whom, in the affectual realm of social media. There's a long legacy of art and language over the past century, probing the burgeoning relationship between language and communication technologies, that question meaning making and reason, and the concept of free will, amidst fears of control. In this century, questions of access, privilege, and the rights to knowledge are exemplified by online flame wars amidst the distracting cries of 'fake' news, with access to knowledge a key driver for social and economic development as Wikimedia, Hannah Arendt, and Mercedes Bunz[1] can all attest to. Shoshana Zuboff's fieldwork shows how the new knowledge territories emerging alongside the capacity to analyse processes and behaviours, also result in political conflict over the distribution of knowledge, as surveillance capitalists "declared their right to know, to decide who knows, and to decide who decides."[2]

I am interested in thinking about these ideas through the lens of posthuman theory that acknowledges that the subject emerges in synthesis with the tools or technologies at hand, and the business models that support these, within the very everyday assemblages of humans and technology that we inhabit, in order to feel out the changes occurring within these new interdependencies. The following writing comes from artists talks that I have given over the years at various institutions, galleries, and artist run spaces. They're a little like vignettes, in the sense that each is a standalone work, but common threads move through them. The works are often prompted by my noticing something; new phenomena

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1   See Mercedes Bunz, *The Silent Revolution: How Digitalization Transforms Knowledge, Work, Journalism and Politics Without Making Too Much Noise* (London: Palgrave Pivot, 2013).

2   Shoshana Zuboff, quoted in John Naughton, "The Goal is to Automate Us: Welcome to the World of Surveillance Capitalism," *The Observer*, January 20, 2019. https://www.theguardian.com/technology/2019/jan/20/shoshana-zuboff-age-of-surveillance-capitalism-google-facebook

perhaps, emerging from the current assemblage of humans and technology, that at the time I had a hunch, or an intuition was going to be significant in the longer term. Often, I will not have fully understood the ramifications of this at the time, and the work itself will reveal something to me further, regarding the nature of why I was drawn to it in the first place.

The works are sites of exploration in themselves. They are ways of thinking through experimentation. They are speculative, and try to grapple with complex systems, where emergent behaviours are still emerging. They tend to defy a logical or straightforward reading where cause and effect might be proven, or unproven, and instead acknowledge that they exist in a still emerging affectual realm, where emotions often rule the day. As such, they do not lend themselves, necessarily, to an easy reading of art as a poetic counterpoint to an axiomatic argument, made for a specific purpose of proving x, y, or z. Yet, they also do not prove x, y, or z.

They are speculative.

And afforded me a space to think about contingency over the last decade.

The Underlying (installation), arebyte gallery, London, 2019. [3]

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3   *The Underlying* (commissioned by arebyte Gallery, 2019) and exhibited again recently in the London Open 2022 (Whitechapel Gallery) is an installation: a body of work that includes: *Lag Lag Lag* (video interface with live sentiment/emotion analysis of BPA's on social media/online news), *Derivative* (Virtual

1. THE UNDERLYING

The Underlying (2019) attempted to grasp, fleetingly, something of the complexities of the multiple, simultaneous scales and temporalities that coalesce around some new, and some very old, power relations which are revealed by the interdependencies of a reputation economy that comes of online news and social media, and the forms of finance driven by this, as they converge in the upcoming environmental challenges ahead.

The focus on *the underlying* in the work*,* draws attention to the material assets, or rather, to the *price*—i.e. the 'performance' of the underlying—that drives the derivatives markets.

The contractual condition of both the derivative and insurance was key to thinking about environmental concerns in ways that reveal the negative effects of capitalism and the economic underpinning of these effects, through a relationship with the past, as the future comes up increasingly short. The backdrop to this is the increasingly financialised economy via neoliberalism, from the '80s onwards.[4] It is no coincidence that the loosening of regulations in banking and trade began at the same time that the climate became the main focus, and I wanted to grasp something of these interdependencies in the current moment.

Bisphenol A is everywhere – is it safe?

HEALTH | COMMENT 20 October 2010

By **David Melzer** and **Tamara Galloway**

Contains more than just water
(Image: Image Source/Rex Features)

Mounting evidence against a chemical we are exposed to daily is being ignored. What more do regulators need, ask David Melzer and Tamara Galloway

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Reality, with live sentiment/emotion analysis re BPA's), and *The Prosthetics* (prosthetic optics, blown glass), a surround sound work made with Paul Purgas, and a large sand-drift that sweeps up against the gallery walls.

4   With the relocation of low and medium tech industries, that meant cheaper labour costs with less regulation, whilst Western countries turned their focus to high end services, with deregulation of the markets and privatisation of the public sector, cutting down on government administered services.

ABSOLUTELY EVERYWHERE: BPA

The Underlying focussed on Bisphenol A (BPA), a pollutant produced alongside the production of plastic since the 1930's, with claims that it is now in the entire world's water supplies and 90% of human bodies. Deemed safe in 2010, like many chemicals now awash in the water supply, this is increasingly being scrutinised, with many products such as water bottles and especially baby products, making claims to be 'BPA free'.

BPA is of particular concern as the two 'hot' points at each end means it binds to humans particularly well, rather than *passing through the body* as other molecules might. It is also a xenoestrogen—a synthetic oestrogen:

> a chemical produced outside the body, which nonetheless has oestrogen-like effects within it. Once classified as safe, since 2010 there has been growing concern over BPA's impact on development, behaviour and mood, amongst other things; some research shows it can increase anxiety and depression.[5]

THE FUTURES MARKET MEETS BEHAVIOURAL FUTURES.

The Underlying co-opts the financier's tool of live sentiment analysis to scour twitter and social media for mentions of BPAs to consider how surveillance, rather than a rogue[6] element of capitalism, enmeshes with the effects of market forces upon the environment, happening at a molecular level.

The work pre-empted many of the conditions brought into sharp focus by the pandemic, as existing inequalities came to the fore fast, facilitated by an unprecedented interconnectivity that reaches across a neoliberal globalised workplace, the effects of which remain inflected by specific geographies and their socio-economic materialities.

Central to risk management, the work foregrounded insurance as a means to consider how models of probability reveal the catastrophic effects of capitalism upon the environment, as 'unprecedented' events become increasingly everyday, and a state of contingency becomes a *modus operandi*.

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5   Emily Rosamond, "Reputation Regimes," *Art Monthly* 461 (November 2022): 4.

6   I dispute Shoshana Zuboff's reading of data mining in her book *Surveillance Capitalism*—as a non-typical condition of contemporary neoliberal capitalism—and suggest instead that the example that she happens to focus upon serves to make visible the extractive forces underlying all capitalist endeavours. For further explanation in relation to tax havens see, "Twilight of the Tax Haven: A Global Corporate-tax Pact Would Ruin a Lucrative Business Model," *The Economist*, June 3, 2021. https://www.economist.com/finance-and-economics/2021/06/03/twilight-of-the-tax-haven

The Underlying 'interface' includes live sentiment and emotion analysis of mentions of BPA on twitter, online news, and the mediasphere

THE INTERFACE: LAG LAG LAG

Lag Lag Lag, displayed on 8 screens reminiscent of financiers' monitors, developed out of my fascination with how the 'interface'; the dashboard, becomes a site for bringing together something of the complexity that informs the work. The title was both a nod to the Cabaret Voltaire song "Nag Nag Nag," and a joke (at my expense, it turned out), regarding the need for speed in data colocation centres being of the utmost importance, whilst a curiously material condition in digital terms, to which our means of transmission—our cables—are also bound.[7]

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7   "… now that computers, not humans, are doing the trading, geography matters exquisitely. With any of these technologies—fibre-optic cable, micro-wave, millimetre wave, laser transmission through the atmosphere—the exact route taken is crucial." Donald MacKenzie, "Be Grateful for Drizzle: High-Frequency Trading," *London Review of Books* 36, no. 17 (September 2014): 27–30.

The interface also allowed me the opportunity to bring together something of the various and distributed ways that we 'sense' the world around us, blurring distinctions between pre-recorded video works and live data, as videos interweave with live 'sentiment' and 'emotion' analysis of the pollutant Bisphenol A on twitter and online news updates. As such, the video works act to enmesh human cognitive as well as non-cognitive processes, blurring human/animal in-distinctions with soft computing, the molecular structure of Bisphenol A, and live data production, engendering the potential as well as the dangers of multiple cross-species hybridities. From a critical posthuman position, this serves to emphasise that any subject to speak of (as questions of authorship also arise) emerges in synthesis with their environment.

The work also emphasises the multiple ways that form and medium (i.e. *how* the story is told, is *also* part of the story),[8] as well as the content of the information we receive, influences our reception of what is being transmitted. Often in combinations of text and image as looping viral feedback systems, that all exist within a competitive economy of attention.

EVOCATIONS

Sound was an integral part of the work, bringing about a relationship with the body that was verging on visceral. I'd been collecting samples from numerous sci-fi's: *Ex-machina*, *Andromeda Strain*, all these great sounds that were often incredible experimental music of their time in their own right. I was thinking of sonic experiments of the sort that would bring about a physical response, holding you, cradling you in sound. The curator Rebecca Edwards described the soundscape as "totally integral to all of the disparate elements of the exhibition coming together"[9] in an interview (2019). A really low bass sound throbs deep underneath, drawing everything together in a physical way whilst also evocative of deep time, which was really important. I liken it to "the kind of sound you experience, but don't really hear, like being on a plane for 14 hours—the deep compression of a molecular spaceship, far out in space, off the shoulder of Orion."[10]

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8   N. Katherine Hayles, "Making the Cut: The Interplay of Narrative and System, or What Systems Theory Can't See," *Cultural Critique* 30 (Spring, 1995): 78.

9   Rebecca Edwards, "Ami Clarke Interviewed by arebyte Gallery Curator Rebecca Edwards," *arebyte*, 2019,
https://www.arebyte.com/ami-clarke-interview-with-rebecca-edwards

10   Edwards, "Ami Clarke Interviewed."

AUTHORSHIP: POROSITY/MULTIPLICITY.

Many texts riddle their way through the work, drawn live from online news feeds, interwoven with theory on the history of calculus, with varying degrees of 'liveness'. The sentiment and emotion analysis trained on twitter and online news, occurs as soon as the work is turned on, and continues to update throughout the day, overlaying a 5-minute cycle of videos interwoven with various texts. Rolling news runs across the bottom of the bank of screens, emulating the endless 24-hour news cycle made popular by aggressive media moguls such as Rupert Murdoch. News feed updates are shown (scrolling upward) with the live sentiment analysis of BPA mentions in online news production—shown on a spectrum between –1 and 1. A live twitter feed (scrolling upward) also shows sentiment analysis of mentions of BPA, on a spectrum between –1 and 1, and emotion analysis showing joy, anger, disgust, fear, sadness via emojis. spectrum between –1 and 1, and emotion analysis showing joy, anger, disgust, fear, sadness via emojis.

The texts moving horizontally across the middle of the screen (known as barrages)—are a phenomenon of online video streaming, where the watching audience is encouraged to comment on the video as it is being streamed live, often obliterating the image. Both these and the rolling news at the bottom of the screen are excerpts from a constantly re-edited script and performance, that reflected on the influence of calculus on current conditions, developed over a ten-year period titled 'Error-Correction: An Introduction to Future Diagrams.' Diagrams have this capacity to draw together complex threads that reveal something of the processes, conditions, and relations of power flowing through today's human/technological assemblages and always point to the next diagram.
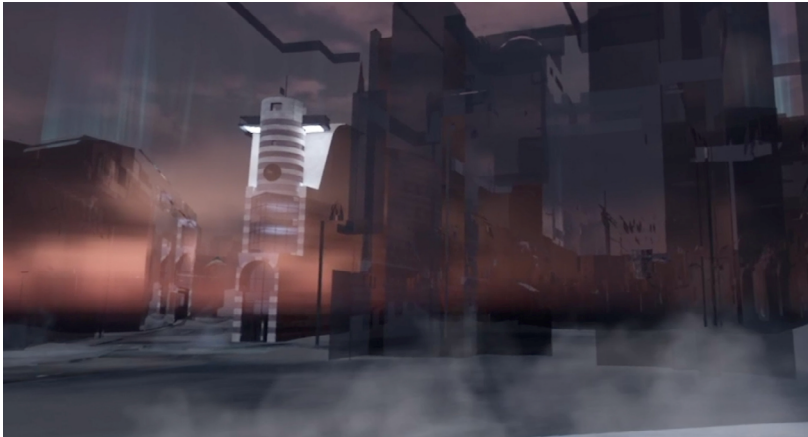
Virtual Reality work: *Derivative*, part of *The Underlying*.

PULLING THE PAST INTO THE FUTURE

Visitors to the virtual reality work, *Derivative*, arrive just outside the iconic striped postmodern landmark of 1 Poultry, in the historical financial district around Bank, in the heart of the City of London, immersed within a dusty crystalline maze, in which familiar landmarks merge with multiple fractured views, reminiscent of popular Sci-Fis such as *Bladerunner 2049* and the Netflix series *Mars*.

The work drew upon a moment captured in meme history, that revealed a glaring blind spot unique to the West (in 2019) with regards to what a natural disaster might look like. As hurricane Ophelia descended, the only point of reference for a dust storm making the London sky turn orange was a fictional depiction of disaster, recounted in numerous news stories as when "the sky turned orange, and everyone made the same Blade Runner joke."
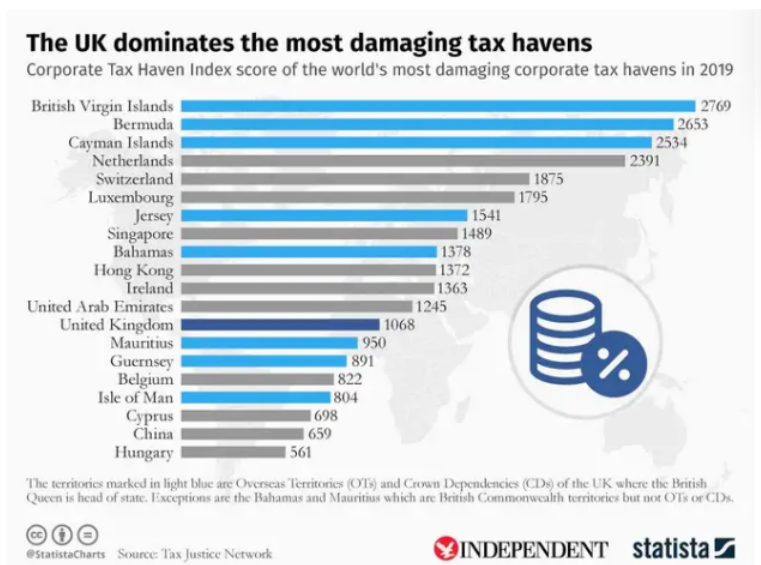
A deeply immersive experience, visitors are invited to explore the VR environment, as live sentiment analysis focussed on mentions of BPAs inform the landscape via an HUD (a transparent heads-up display common in gaming) that shows the most recent tweet and news update with its sentiment/emotion analysis reading, which in turn informs the amount of airborne particles that occur during the visitor's experience.

A PARALLEL PRESENT

The VR work is set in a parallel present that asks just how 'virtual' the extractive practices of capitalism really are, with little regard shown for the very real costs to the environment and the people living there. As particles escape the virtual landscape, they slump up against the gallery wall in the form of a huge sand drift, that in turn informs the materiality of the clusters of glass eyes of *The Prosthetics*.

The work emphasised (in 2019) that an important aspect of the climate challenges ahead is to address, from an initial phase, present inequalities borne out of colonialism, with legacies often found in geographical locations with projections of the most volatile environmental futures. Since then, discussion at COP26 (2021) and COP27 (2022) has emphasised how climate debt is essential to address, with a (far too) slow acceptance that loss and damage was vital, from those who historically benefitted from colonialism during Industrialisation.

The UK dominates the most damaging tax havens
Corporate Tax Haven Index score of the world's most damaging corporate tax havens in 2019

British Virgin Islands	2769
Bermuda	2653
Cayman Islands	2534
Netherlands	2391
Switzerland	1875
Luxembourg	1795
Jersey	1541
Singapore	1489
Bahamas	1378
Hong Kong	1372
Ireland	1363
United Arab Emirates	1245
United Kingdom	1068
Mauritius	950
Guernsey	891
Belgium	822
Isle of Man	804
Cyprus	698
China	659
Hungary	561

The territories marked in light blue are Overseas Territories (OTs) and Crown Dependencies (CDs) of the UK where the British Queen is head of state. Exceptions are the Bahamas and Mauritius which are British Commonwealth territories but not OTs or CDs.

@StatistaCharts Source: Tax Justice Network **INDEPENDENT** **statista**

It was also important to pull upon an often unacknowledged thread that draws together Britain's earlier extractive practices during Empire to the present day, with Britain

being by far the biggest enabler of global corporate tax dodging, per ground-breaking research by the Tax Justice Network.[11] The research highlights a widely acknowledged, but fundamentally unsolved situation that points to "the role of the UK and its network of Overseas Territories and Crown Dependencies in undermining the ability of other countries, including some of the poorest in the world, to provide for the most basic rights of their citizens."[12]

This is where much of the current moment crystallizes; around wealth derived from relations that inscribe ongoing inequalities. This is where the secret sauce of memetic media meets the magic sauce of right-wing billionaires, underwriting political campaigns to facilitate a wholesale move to the hard right, as various strategies emerge, as the planet continues to heat up and the era of fossil fuel power wanes.

A closeup from the interface, of the emotion analysis 'register' of emotions, that include: joy, anger, disgust, sadness, fear.

11   Corporate Tax Haven Index, "The World's Biggest Enablers of Corporate Tax Abuse," https://cthi.taxjustice.net/en/

12   Christian Aid, "Stop Turning a Blind Eye, Christian Aid tells UK after Overseas Territories Top Tax Haven Index," *Christian Aid*, 28 May 2019, https://mediacentre.christianaid.org.uk/stop-turning-a-blind-eye-christian-aid-tells-uk-after-over-seas-territories-top-tax-haven-index/.

REPUTATION REGIME

It is also here, in the financial markets, that the management of risk, the reputation economy, and the impending environmental crisis converge in a number of important ways that currently dominate the media-sphere.

The co-opted financier's tool of sentiment and emotion analysis influence a pricing model, built by ex-derivatives trader Jen Elvidge with programming by Rob Prouse, to develop a live interface in the gallery space, that maps the rise and fall of reputation, in real time. Utilising weather futures contracts, pollution data, and the FTSE, fluctuations are plotted in the stock prices of the top 100 most polluting companies in the world responsible for over 70% of emissions. In our pricing model, local pollution data from the longitude and latitude of the gallery also contribute to a speculative view into the rise and fall in reputation of these top 100 companies, as public opinion turns, and insurance companies lose their appetite for underwriting companies dealing in the production of pollutants, such as fossil fuels. The sentiment and emotion analysis, in turn, influences the number of airborne particles in the VR work, Derivative.

In a 2015 analysis, "Social Media, Financial Algorithms and the Hack Crash," Tero Karppi and Kate Crawford draw attention to the Dataminr software that mines Twitter's "firehose" and delivers what is deemed relevant into the hands of traders.[13] (Twitter used the term 'firehose' for complete access to its social media data.). Citing journalist Michelle Price in the Financial News, they write that this sophisticated scoring of the relationships between words in play, can uncover grades of expressed "emotions" and produce more than just a sentiment analysis of Twitter data: "Through real-time analysis of Twitter data, software packages like Dataminr assess emotion, importance and social meaning in order to 'predict the present' and thus transform social media signals into economic information and value.

Karppi and Crawford suggest that digital innovations generally, and software code specifically, are codes also in the sense of being able to shape human conduct. They argue that:

> Twitter and social media are becoming more powerful forces, not just because they connect people or generate new modes of participation, but because they are connecting human communicative spaces to automated

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13   Tero Karppi and Kate Crawford, "Social Media, Financial Algorithms and the Hack Crash," *Theory, Culture & Society* 33, no. 1 (2016): 79.

computational spaces in ways that are affectively contagious and highly volatile.[14]

Every society in history exhibits encoded behaviour that acts performatively in describing relations, and hence what is possible between the individual and the communities they live within, often inscribing hierarchies through exclusive or inclusive language and grammar. But here language and code are threaded through the very fabric of the affectual realm. It warps and weaves new kinds of societies, often driven by shock and outrage and increasingly extreme emotions, in tandem with the brute force of algorithmic governance via business models, *not* ethical choices, well beyond the human realm.

LOW ANIMAL SPIRITS.

Low Animal Spirits (2014) a High Frequency Trading (HFT) algorithm dealing in world news, speculated on what is 'about' to trend, and started to speak of the highly volatile production of language, within the calculus of a meme economy.

The work emerged from the semiotic boom in which hyper-speculation via the loss of the referent in both language and the economy can be seen to be shared across the trending behaviour of neoliberal and free market dynamics in finance as well as emerging media ecologies. The work lead on to further writing, and a darkly absurdist work titled "Alexa, Google, 23andme," that focused on a sub-reddit group called r/MemeEconomy[15] which

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14   Karppi and Crawford, 79.
15   r/MemeEconomy is a satirical notion and online subculture in which memes are addressed in financial language as if they were commodities or capital assets with varying prices.

assessed memes in terms of financial fecundity and importantly pointed to the social currency by which memes operate.[16]

In his book *Technic and Magic: The Reconstruction of Reality*, Frederico Campagna writes about the totalizing effect of language that is peculiar to this era, where "record-shattering investments in Big-Data systems and technology rest on the belief that there can't possibly be anything ontologically relevant that couldn't, at least potentially, be reduced (and reduced truthfully) to the serial units of the language of data." He made the case that "through substituting the terms 'information technology' with 'finance', we can understand the contemporary role played by financial capitalism, not merely as translator of the world into its own linguistic structure, but as the creator of a world that coincides exactly with such structure."[17]

Campagna goes on to reflect upon a selection of practices including spirituality, religion, and magic(k), that try in different ways to grapple with this seeming slip in the warp and weft of reality.

It seems pertinent, though, first, to ask which 'reality' paradigm is being distorted, in the first place. The myth of the market, that so indoctrinates a sense of things, with animal spirits informing the vision and heroic stance of the individualistic trader seeking to buck the trend, work against the flow, and 'reboot' the market, when caught in a downturn of low animal spirits, succeeds in naturalising behaviours that can only come of this particular assemblage, at this particular historical moment. Neoliberalism emerged around the same time as the Neo-Darwinists who, in turn, had adopted ideas from the markets that informed concepts of the 'selfish gene', and in evolutionary terms: the competitive spirt of 'survival of the fittest'. That this was it's mantra, rather than opt for the more collaborative approach that the evolutionary biologist Lynn Margulis's studies pointed to, for example, leaves little doubt that it was a deeply ideological decision to do so.

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16   Ioana Literat and Sarah van den Berg, "Buy Memes Low, Sell Memes High: Vernacular Criticism and Collective Negotiations of Value on Reddit's MemeEconomy," *Information, Communication & Society* 22, no. 2 (2017).

17   Frederico Campagna, *Technic and Magic, The Reconstruction of Reality* (London: Bloomsbury Academic, 2018), 42.

Ami Clarke: Author of the Blank Swan

THE NATURE OF CONTINGENCY

Ami Clarke: Author of the Blank Swan[18] was a work made in response to Elie Ayache's book *The Blank Swan*—a book about 'writing', 'pricing' and 'contingent claims', in which he suggests that 'writing' has an equivalence to 'pricing' in the derivatives markets. His philosophical enquiry asked, "what technology might be available to get inside the very process of history and do something more active than to watch passively as history unfolds...altogether different from the conceptual activity consisting in predicting and outguessing history."[19]

The Blank Swan focuses on the Jorge Louis Borges' story of "Pierre Menard, Author of the Quixote" that depicts a fictional writer and critic; Pierre Menard, who spends his time writing the 9th and 38th chapters of the first part of the 17th century book *Don Quixote* by Miguel de Cervantes, and a fragment of chapter 22—several centuries on from when the text was published. As such, interpretations of the Borges story tend to focus on how 'reading' brings about 'difference' through a Barthesian emphasis on the true locus of writing as reading. Conversely, Ayache's focus interpellates Borges' fiction with the apparatus of the derivatives markets: the dynamic replication of the BSM (Black Scholes Merton) model, and the derivative contract, that implicitly relies on writing. Taking him up on his challenge, with each word that I wrote of "The Blank Swan: Chapter 4, Writing and the Market," one dismal winter holiday break, with a snivelling wretched cold: there

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18   During the ICA London Technology Now series of talks (https://archive.ica.art/whats-on/series/technology-now), I explore how Jorge Louis Borges' story "Pierre Menard, Author of the Quixote," central to Ayache's philosophy, differs from previous ideas of copying and appropriation, to repeat the contingency of the text.

19   Elie Ayache, *The Blank Swan: The End of Probability*, (Chichester: Wiley, 2015), 92.

was simply nothing that could guarantee that any given word would necessarily follow the next.

The artist Elaine Sturtevant back-dates her artist's book *Sturtevant: Author of the Quixote,*[20] published in 2009, via a letter written to Borges in the introduction, to 1970, around the time of her early practice of making works of other artists works. As Patricia Lee notes "pushing the codification of artists to specific signifiers" in relation to the structures and systems of art, and thereby reducing the artists' work to a sign; a brand: an easy meme producer, percolating myths of genius, and so on, that could be seen to have more to do with the market than whatever other values might be claimed for art at any given time in history. Sturtevant's emphasis on "the brutal truth of the work is that it is not a copy" is shared in Ayache's thinking when she claims "the dynamics of the work is that it throws out representation."[21] Ayache writes "Only through the writing/trading performance and not through the realization of a theoretical stochastic process, that is framed in representational thought, can the writer or trader of contingent claims exceed the saturated context and move to the next—i.e. he can trade."[22] What this brings forth, in Ayache's terms, is the trading room and a performative capacity that is singular and non-reproducible.

A capacity to write the future, seemingly shared across the blockchain in so far as a technology that exceeds probability through the timestamp. A startling, brilliant grasp of contingent forces at work.

But, via the abstraction of finance, and the absence of the indexical link to the referent, these futures are simply not embedded in any material sense of reality. As Hayles notes, "Ayache's vision of the market's ontological power is a neoliberal fantasy run wild, fuelled by Quentin Meillassoux's (2010) philosophical argument for the absolute nature of contingency and applied by Ayache to finance capital."[23] As such, the promises made, sound much like those made for blockchains bright new future, a decade or so ago, that is (for the most part) still yet to materialise. Blockchain, and derivative trading softwares, are, after all, only tools, and just as a pen is only useful in so far as what you choose to write with it, so is the potential of contingency. The most urgent and compelling aspect of the equation, for me, then, on either account, is *who* gets to write the future in this new calculus.[24]

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20   Elaine Sturtevant, *Sturtevant: Author of the Quixote*, (Cologne: Walter Koenig, 2009).

21   Patricia Lee, *Sturtevant: Warhol Marilyn (Afterall)*, (Cambridge, MA: MIT Press, 2016), 21.

22   Ayache, 7.

23   N. Katherine Hayles, *Unthought: The Power of The Cognitive Nonconscious*, (Chicago: The University of Chicago Press, 2017), 148.

24   Ami Clarke, "Text as Market," in *Artists Re:Thinking the Blockchain*,ed. Ruth Catlow, Marc Garrett, Nathan Jones and Sam Skinner (Torque Editions & Furtherfield, 2017), 134.
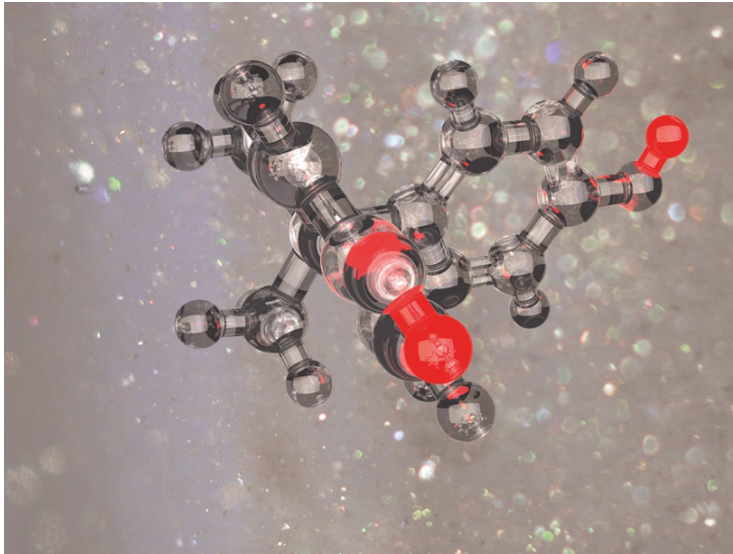
BPA molecule – still from *Lag Lag Lag – The Underlying* (2019)

2. "HOW TO ACT IN A TECHNO BAROQUE CONDITION," PRECIADO ASKS.

Publishing and writing developed alongside technological advances throughout history, and has a tendency to reveal how technologies inflect, as well as contain, traces of the 'subject'—i.e. the 'I' that writes: the author—emerging in synthesis with their environment. That necessarily includes the means of production and distribution at any given time in history, and in a present-day context that includes X, Twitter, TikTok, Instagram, Facebook and so on, all of which operate within the protocols of platform capitalism[25] and surveillance capitalism. What this also means is that it is necessary to include the hardware, the software, and the broadband speed, as well as legislation governing net neutrality (for example), or whether the government chooses to act on emissions data (for example), as well as other networked protocols, and the material distinctiveness of geographic regions, that all contribute to specific socio-economic and political configurations.

The online journal and publishing organization Triple Canopy describe this new milieu of software, hardware, and (undercover) ideology, in their essay "The Binder and the Server," as such: "power is no longer exercised at fixed co-ordinates along clear lines of force; rather, power is pervasive and operates subtly."[26] They go on to elaborate on the new conditions described in "Galloway's theoretical model for *Protocol*" which they say is

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25   See Nick Srnicek, *Platform Capitalism* (Polity, 2016).

26   Colby Chamberlain, "The Binder and the Server," *Triple Canopy*, 18 February, 2012. http://art-journal.collegeart.org/?p=2644

"heavily indebted to Gilles Deleuze's tantalizingly brief (or frustratingly underdeveloped, depending on your disposition) 'Postscript on the Societies of Control' ...'the essay argues that the enclosed institutions of Foucault's discipline society—the barracks, the school, the prison—have given way to the continuous, open-ended topologies of what Deleuze calls control societies.'"[27] In *Protocol,* Galloway's point is that computer protocols are prime examples of control at work shifting from serial and optical control, to modulatory control of data.[28]

Writing in *Cloud Time* in 2012, Coley and Lockwood describe that while Michel Foucault's panopticon was a vision machine, "control" is about the "accumulation of knowledge and the sorting and ordering of this knowledge."[29] Thus "control" deals "less directly with bodies than with the data patterns that result from such sorting procedures."[30] In this sense, "I am ghosted by my data double—it's not me, the individual, that is at issue, it is the non-conscious agency of my data ghost, the "dividual" as Gilles Deleuze puts it".[31] "Control *modulates* bodies, it does not confine or render them static; a form of power which works through the manipulation of the flows which move bodies, and the thresholds across which they must cross"[32] as data becomes "a strategic asset and a behavioural surplus, underwriting in turn, a monetary surplus for the likes of Google, Microsoft, Amazon with a colonising ruthlessness."[33]

The "semiotic boom" of the linguistic turn, then, whereby hyper-speculation via the loss of the referent in both language and the economy are shared across the trending behaviour of neoliberal/free market dynamics in finance, as well as emerging media ecologies, very much like the markets had done in a previous era, provided a primary site for the research of cognitive bias. In turn, affording a glimpse of a highly volatile and paradoxical model of mass-behaviour, at a time when the traditional figure of the deeply indebted subject, *homo economicus*, became raw material in a lifeworld utilised as a system for the notation of market trend data. Questions regarding the currency of data then emerge with platform protocols, just as data as a currency might still unfold. Much like the Wages for Housework movement noted, historically, it really doesn't matter if you want to think of human interactions and emotional responses as quantifiable or not—it's

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27   Chamberlain
28   See Alexander R. Galloway, *Protocol: How Control Exists after Decentralization*, (Cambridge, MA: MIT Press, 2006).
29   Coley and Lockwood, 19.
30   Coley and Lockwood, 19.
31   Coley and Lockwood, 19 referencing: Gilles Deleuze, "Postscript on the Societies of Control," *October* 59 (Winter, 1992): 4, 6. http://links.jstor.org/sici?sici=01622870%28199224%2959%3C3%3A POTSOC%3E2.0.CO%3B2-T.
32   Coley and Lockwood, 19
33   Zuboff, quoted in Naughton.

happening anyway.

In this panopticon, *The Underlying* suggests that molecular entanglements enmesh with Deleuze's modulatory control of data, as sentiment analysis mines Twitter's 'firehose' and a sophisticated scoring of the relationships between words in play, uncovering grades of expressed 'emotions' as well as importance and social meaning—"in order to 'predict the present' and thus transform social media signals into economic information and value."[34]

The Underlying installation in The London Open, Whitechapel Gallery, London 2022.

REPLICANT / POSTHUMAN

> "If nature is unjust—then change nature"
>
> (*The Xenofeminist Manifesto: A Politics for Alienation*[35])

Derivative draws from the popular imaginary of blockbuster film productions, but located amongst the City of London's financial district, for something more akin to "Bladerunner 2019: The Burnout" in the year the first film was set. The replicant in Ridley Scott's

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34   Karppi and Crawford, 80.
35   Laboria Cuboniks, *The Xenofeminist Manifesto: A Politics for Alienation* (London: Verso, 2018).

Bladerunner had been an important construct to me growing up as a teenager—one that was left ambiguous, as Deckard's status as to whether he is replicant or human, is never revealed, whilst the 2017 film lost this nuance almost entirely.

Fascinated by Bisphenol A, as oestrogen left me during menopause, it took me back to adolescence where I was prescribed synthetic oestrogen at the Tall Girls Clinic: Department of Growth and Development, Great Ormond St Children's hospital, in a desperate bid to limit my growth. As I emerged via biochemical prosthesis, I was fully aware of the plasticity of gender, in stark contrast to any biological determinism.

Here, the alienation inherent in being a cyborg (replicant, or post-human), as *a machine aware of being a machine* leads to an understanding of identity as a construct, that hence can be constructed anew, whilst foregrounding how technologies such as synthetic hormones, for example, lead to a *writing* technology of choice.[36] Preciado writes: "A shift from the mechanical idea of the body to a body that is defined through the system of communication, a network, 'a thick interiority' full of networks. Therefore, the task is to intervene in these connections—a biomedial theory, and a theory of communication that holds material effect of these exchanges. Again, drawing attention to the constructed nature of the sexual binary, neither 'an anatomic truth, a hormonal truth nor a morphological truth (1940's)', whilst homosexuality was invented for the purposes of shoring up heterosexuality and the management of reproduction, as labour force for capitalism."[37]

Preciado's reworking of Foucault's history of sexuality (for Foucault is no feminist, let us not forget), describes the necropolitical regime as it enters biopolitical forms of government, with the regime of hormones in the pharmaco-pornographic era making progesterone and oestrogen the best sellers in the history of pharmacology, and key elements of global capitalism.

[36]   Accordingly, for Preciado agency is accessible through prostheses: we are constructed through drugs, objects and representations, but we can also construct ourselves through them." Paul B. Preciado, "Testo Junkie: Hormones, Power, and Resistance in the Pharmacopornographic Regime," Public lecture at Wellcome Collection, London, 5 June, 2018.
[37]   Paul B. Preciado, "Testo Junkie: Hormones, Power, and Resistance in the Pharmacopornographic Regime," Public lecture at Wellcome Collection, London, 5 June, 2018.

The Prosthetics[38]

ASSEMBLAGES

Whilst the complex interweavings of humans and technologies are nothing new, they often include a relationship between people and technology so intimate that it's no longer possible to tell where we end and machines begin.[39] Donna Haraway famously drew attention to the technology of sports footwear, insisting that this include "the interaction of medicine, diet, training practices, clothing and equipment manufacture, visualization and timekeeping."[40]

Here, it is important to combine Haraway's thinking with N. Katherine Hayles' work, where rather than networks:

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38   Foregrounding the technicity of new horizons, whilst blurring the binaries of natural versus artificial, *The Prosthetics*—three sculptures made of ocular prosthesis (glass eyes)—cluster together, looking out from the corners of the galleries architecture, emphasising the idea of sharing resources, that in turn, spawns new configurations, calibrations, and collaborations. Reminiscent of organic organisms, they draw reference from the Fates, the three sisters forced to share one eye between them. Suggestive of the surveillance that drives data analysis, they also point to the limited resources of a dwindling biosphere, but also to the collective approach necessary to face the challenges ahead regarding environmental change.

39   Hari Kunzru, "You Are Cyborg: For Writer, Professor, and Self-Proclaimed Cyborg Donna Haraway, We Are Already Assimilated," *Wired,* February 1, 1997. https://www.wired.com/1997/02/ffharaway/.

40   Kunzru.

> […] cognitive assemblages come together, create connections between human and technical actors, initiate, modify and transform information flows, thereby bringing contexts into existence that always already determine the kinds and scope of decisions possible within milieus and the meanings that emerge within them.[41]

The emphasis in posthumanism is that human subjectivity emerges in subtly different ways during different eras, dependent on the technologies to hand, be it the pencil, the printer, or the smartphone. Implicitly, this also means that subjectivity emerges through market relations.[42] And the intimacy of these relations means that we inhabit networks so tangled, that Hari Kunzru writes (referencing Donna Haraway's work):

> If this sounds complicated, that's because it is—part human, part machine; complex hybrids of meat and metal that relegate old-fashioned concepts like natural and artificial to the archives. These hybrid networks are the cyborgs, and they don't just surround us—they incorporate us.[43]

When the ways by which people communicate with one another in the public realm is predicated upon a business model such as social media's ranking system, where news becomes a popularity contest, based upon intensities of outrage, within an economy of attention, in what the theoretician Emily Rosamond describes as a 'reputation regime' (and a shift from General Intelligence to General Opinion) - this can be both indicative of 'how' this is engineered, as well as far wider issues.

Issues to do with control and the desire to freely express oneself, linger in the frictions between code and language typified in Neal Stephenson's *Snow Crash* [44] of 1992—a narrative still driving the culture wars, of which little has changed since. Alongside this, the perception of the bounded self of the neoliberal subject, seems at stake, no less, grounded upon the concept of free will. As such, the spectre of 'control' riddles its way through *Snow Crash* with the ancient Sumerian nam-shub described by Stephenson as a programming language that asks questions about the performativity of language, and code, both in societal as well as computational terms.

In posthuman terms, Hayles describes the way that 'control' seems central to human identity as the sense of a conscious agency. Hayles writes, by contrast, the posthuman

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41   N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (London: University of Chicago Press, 1999), 117.

42   Hayles, *How We Became Posthuman*, 117.

43   Kunzru.

44   Neal Stephenson, *Snow Crash* (New York: Bantam Books, 1992).

view has never been 'in control' in the first place. She describes how

> The illusion of control, bespeaks a fundamental ignorance about the nature of the emergent processes through which consciousness, the organism, and the environment are constituted. Mastery through the exercise of autonomous will is merely the story consciousness tells itself to explain results that actually come about through chaotic dynamics and emergent structures.[45]

With these new dynamics in play, it seems also pertinent to address the ways by which we might perceive of the flows of information, power and identity, in a more up-to-date diagram, that is capable of capturing something of the affectual realm in which they exist. I refer to Hayles' concept of an assemblage, where sophisticated information-processing abilities happen where humans and cognitive technical systems interact to form 'cognitive assemblages'.[46] I foreground her use of the word assemblage as a term that distinguishes between different material forces acting within it, that is: consistent with pre-existing entities, within a growing spectrum of cognitive and non-cognitive actors and actants, that becomes an assemblage due to the information moving through it, as parts fall off, as well as join.[47]

still from *Lag Lag Lag*, interface, *The Underlying*

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45   Hayles, *How We Became Posthuman*, 288.

46   Hayles, *Unthought*.

47   N. Katherine Hayles, "Cybersemiosis: Meaning-Making in Humans, Nonhumans and Computational Media," Guest Lecture at Archaeologies of Media and Technology Research Group, Winchester School of Art, Southampton University (2018).

CONTINGENCY, AND THE PROBLEM WITH AUTOPOIESIS

> "How, finally, can we know and constitute our social reality outside
> the necessarily circular and cognitively closed terms that are lawlikely
> indispensable to the existential enactment and stable replication of our
> own societal order as such a living system?"[48]

In "Making the Cut: The Interplay of Narrative and System, or What Systems Theory Can't See," Hayles writes that "*how* the story is told is also part of the story"[49] whilst attempting to describe the Chilean neurophysiologist Humberto Maturana's takeover of the concept of autopoiesis. Upon dissecting Maturana's biologically influenced conception that the 'organisation' of the system is primary, she goes on to propose that this is not only incorrect (in terms of its reference), but irredeemably problematised by the exiting of the observer within the system itself.

Whilst Maturana is dealing with organisms, though, Luhmann is dealing with societies, and she writes, "the *mechanism* of closure is displaced from the working of perception onto the working of codes."[50] Thus the circularity of autopoiesis is realised between a system's codes and its organisation. For Luhmann, "interaction takes place between the codes that social agents employ."[51] Hayles summarises that for Luhmann, "When one goes out to drink, one employs the code of drinking, and it is this code, not the individual's thoughts or activities, that constitute drinking as drinking. What autopoietic biological processes are to Maturana, social codes are to Luhmann."[52]

She describes how the problem with systems theory, is that once the system is revealed, whether it be the invisible workings of power in Foucault's Society of Surveillance, Lacan's psycholinguistics, or Maturana's autopoiesis—the system, precisely because of its logic and power, is likely to seem inevitable and inescapable.

As she develops her argument, she remarks that for systems theorists, Luhmann is remarkable, though, in recognising that every system has an outside that cannot be grasped from inside the system. The advantage she seeks to claim for narrative, points to the fact that the closure that systems theory imposes, is not inevitable, as Maturana would

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48   Sylvia Wynter, "The Ceremony Found: Towards The Autopoetic Turn/Overturn, Its Autonomy Of Human Agency And Extraterritoriality Of (Self-)Cognition," in *Black Knowledges/Black Struggles: Essays in Critical Epistemology*, ed. Jason R. Ambroise and Sabine Broeck (Liverpool: Liverpool University Press, 2015), 202.
49   Hayles, "Making the Cut," 78
50   Hayles, "Making the Cut," 96.
51   Hayles, "Making the Cut," 96
52   Hayles, "Making the Cut," 96.

have us believe, but *contingent*.

She writes:

> Thus, in my reading, a system looms not as an inevitability but rather emerges as a historically specific construction that always could have been other than what it is, had the accidents of history been other than what they were. In this reading, one exits the system not merely to enter another system, but to explore the exhilarating and chaotic space of constructions that are contingent on time and place, dependent on specific women and men making situated decisions, partly building on what has gone before and partly reaching out toward the new.[53]

In a way that I cannot possibly hope to do justice to here, but I want to mention nonetheless, Sylvia Wynters addresses the concept of neurotechnicity in the "Autopoetic Turn/ Overturn," modelling a telos of the Ceremony Found's *New Studia,* which takes account of the biological reward system and drives the constituting of self-replicating codes, that I would suggest are also to be found in the operation of memes as social currency.

Wynters work provides a summary of the multiple paradigms concurrently converging, of which a brief excerpt, reads as such:

> Indeed, the imperative need for such a transformative mutation takes on added importance when linked to the "particular wrong" identified by W. E. B. Du Bois in 1903 as the negation of our co-humanity as a species via the "Color Line," as well as to the "general wrong" of Gerald Barney's (and Aurelio Peccei's) "global problematique" and its intractable "problem" of the looming possibility of our and other species' extinction as a result of the related threats of global warming, climate change and general ecological cum environmental degradation.[54]

Identifying these, necessarily, as "generated by our performative-enactment and behavioural-praxis of the planetarily extended, secular Western, now neo-Liberal-monohumanist *genre* of being hybridly human *Man*(2), itself over-represented in *homo oeconomicus* cum neo-Darwinian terms as *homo sapiens sapiens* as if this self-definition were isomorphic with the *being* of being human as *Homo Narrans* itself."[55]

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53   Hayles, "Making the Cut," 98–99
54   Wynter, "The Ceremony Found," 222
55   Wynter "The Ceremony Found," 222

EPISTEMIC SHIFT

Preciado's discussion with Jack Halberstam at the ICA in 2020 draws attention to the epistemic shift, from writing to the internet, the like of which the world has not seen since the 16th Century. He described how "Copernicus's critique of the Ptolemic conception of the universe, show[ed] how deconstruction is not a set of criticisms meant to make a system better—the idea that the earth goes round the sun is not an improvement of the idea that the sun goes round the earth—but a shift in perspective that literally makes the ground move".[56]

He writes further on the shift currently underway, as such:

> If the concept of gender has introduced a rift, the precise reason is that it represents the first self-conscious moment within the epistemology of sexual difference. From this point on, there is no going back; Money is to the history of sexuality what Hegel is to the history of the philosophy and Einstein to the conception of space-time. It is the beginning of the end, the explosion of sex-nature, nature-history, time and space as linearity and extension. With the notion of gender, the medical discourse is unveiling its arbitrary foundations and it's constructivist character, and at the same time opening the way for new forms of resistance and political action.[57]

In these instances, code and language are central to a new paradigm, of both control and of surveillance, as well as sites of enormous creative potential (despite too few instances to be seen of this sort thus far. (See Project Cybersen,[58] Chilean president Allende's attempt at a socialist 'web' with British cybernetician Stafford Beer, for alternative visions of what might have been, and what could still be).

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56   "Paul B. Preciado with Jack Halberstam," Critical Conversations at the Institute of Contemporary Arts, 2020.
57   Paul B. Preciado, *Testo Junkie: Sex, Drugs and Biopolitics in the Pharmacopornographic Era*, trans. Bruce Benderson (New York: The Feminist Press at CUNY, 2013), 113.
58   See Grupo Synco (Bassam El Baroni, Constantinos Miltiadis, Georgios Cherouvim, and Gerriet K. Sharma), *Cybersyn 1973/2023*, 2022, https://vimeo.com/572121732
Project Cybersyn was an experiment in instituting a socialist networked economy embraced by the short-lived Salvador Allende government of Chile (1970–1973) and developed together with the British cybernetician Stafford Beer. For the past decade, Project Cybersyn has been a recurrent reference—a best practice from the past—in discussions around the repurposing of hegemonic technological infrastructures and their redirection towards more equitable economic and social practices.

PHARMAKON

From a posthuman perspective, the BPA molecule in *The Underlying* points both to potential poison, and to the infinite plasticity ran amok in the worlds water supplies.
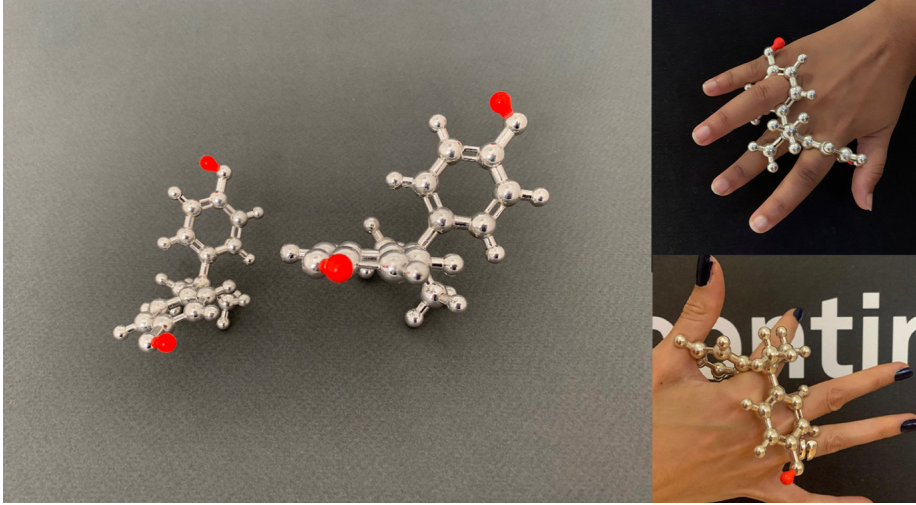
BPA molecule wearable sculptures

> —a pharmakon: part poison / part cure
> Pharmacia (Pharmakeia) is also a common noun signifying the administration of the pharmakon, the drug: the medicine and/or poison… socrates compares the written text Phaedrus has brought along to a drug (pharmakon). The pharmakon, this "medicine", this philtre, which acts as both remedy and poison, already introduces islets into the body of the discourse with all its ambivalences…that which resists any philosopheme, indefinitely exceeding its bounds as nonidentity, nonessence, nonsubstance; granting philosophy by that very fact the inexhaustible adversity of what funds it and the infinite absence of what founds it.[59]

An amulet holding within it the potential for infinite plasticity, as a molecular spaceship with the capacity to forge a future engineered differently to the past.
A writing technology of choice. A capacity to write the future.

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59   Preciado, *Testo Junkie*, 145

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