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Keep On Keeping On: Continuous Noise, Iterative Loops and Computational Aesthetics

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In this paper, we propose two concepts regarding computational artistic practices and their aesthetics: noise and loops. The primer being *prima materia* to computation and the latter its poiesis. Starting by a definition of computation situated and comprising widely enough accepted notions, we argue for the reading of computational arts as continuously self–performing practice based on constant production of information, and conclude on opening a reflection on their possibilities regarding non–human interactions. We put forth these notions by reading into two selected pieces: *Noise for the Nothing Unity* by Vomir and *How Computers Imagine Humans?* by João Martinho Moura. These artworks help us investigate upon the aesthetical strategies of computational art pieces and provide a good illustration of the various technical differences in computation's embodiment.

Keywords: Computational Aesthetics, Computational Art, Noise Studies, Software studies, Art and Technology, Computation, Ontology.

1. Introduction

The simplest way to describe computational aesthetics would be deriving them from computational art practices. But that would be saying very little, as those practices themselves can be difficult to situate precisely. Defining computational arts (CA) from computation (Carvalhais 2022) — i.e. differentiating them from all art that is made on a computer in favor of a more process-oriented, "computation as subject" approach — helps laying a foundation for what they are and what aesthetics they entail. Still, a question remains at the crux of it, that threatens this sequence: how exactly do we even define this notion of computation, amongst all of its acceptances?

This paper aims at (1) proposing a curated — and necessarily non–exhaustive — list of notions regarding computation that are sufficiently widely accepted to derive a general proposal for computational aesthetics; (2) advocating, based on the thus defined process, for the identification of informational noise as the *prima materia* of computational art practices, and (3) for the iterative structure of programming loops as computational poiesis. As main examples of computational art to analyze and reflect upon, this paper will centered its interpretation on two art pieces: *Noise for the Nothing Unity*[1] (2020), by French Harsh Noise Wall (HNW) pioneer Vomir (Romain Perrot), and *How Computers Imagine Humans?*[2] (2017), by João Martinho Moura. As the latter can be more evidently held as computational art, the relevance of a computational reading of the former and of the HNW movement will be developed. In conclusion, this paper argues that these ideas help define a specific aspect of computational aesthetics: its focus on de-anthropocentering all discourses regarding computation, defending the idea that by engaging with pieces where so much of our traditional expectations are subverted, computational art offers examples of inhuman interactions (Leach 2020).

2. Computing: can't stop won't stop

2.1. The Complexity of Computational Situating

In many ways, CA are to computation the Critical Technical Practice Philip Agre hoped for in his 1997 essay.[3] As "deviation amplifying systems" (Burnham 1969), they present an opportunity to question computing technologies by using these same technologies. This sort of behavior defines CA as an investigatory art practice (Shanken

1. Vomir. 2020. "Noise for the Nothing Unity". Accessed January 31, 2023. https://vomir.bandcamp.com/album/noise-for-the-nothing-unity
2. Martinho Moura, João. 2017. "How Computers Imagine Humans ?" Accessed January 31, 2023. http://jmartinho.net/how-computers-imagine-humans/
3. Agre, Philip. 1997. "Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI" in *Social Science, Technical Systems and Cooperative Work: Beyond The Great Divide*, edited by Geoffrey Bowker. USA: L. Erlbaum Associates Inc.

2012). Though, and perhaps precisely because of that investigatory nature, CA are called to situate themselves in the scientific, historic and philosophic landscape they offer to explore; and quite a rugged landscape it is. The history of computation is one of transdisciplinary enquiries, originating in mathematics to spread across philosophy, engineering (where it gave birth to computer science, its very own field of study) and cognitive science. To try and retell all of it is way beyond the scope of this paper, but it is nonetheless crucial to acknowledge, when talking about computation, that it is not a given, static corpus, but rather a still very disputed field of scientific research; that nothing in computing technologies is "neutral, or value–free, even if we are naturalized to it" (Penny 2017, 4). As for this paper, its goal being the articulation of transversal artistic strategies through different pieces, computation both analog and digital, both embodied and representational will be considered,[4] their common areas precisely revealing what justifies the relevance of the delimited aesthetic vocabulary.

2.2. What We Can Agree upon Regarding Computation

One such shared element across all acceptances of computation is its dynamic nature (Rucker 2005). Computation is a process, something to do, not a given state. The nutrient for this process is information — whether it be bits of Boolean logic, motosensory inputs, fluctuation on an electric signal — but the computation itself starts when something is done with the information. This implies that every computational system is designed to perform computation, and that when talking about such a system or piece of technology, we do not only speak of it as a static object, but as an enabled, actively outputting agent.

Consequently, computation is both transformative in its operation and additive in our perception of it. Transformative meaning that enabling a computational system and feeding it with information is planning for that information to be computed upon. Either processed as to be re-ingested back in a feedback loop or embedded into a different bit of information that will be then passed to another system. Once again, while the modalities of these transformations are being disputed among the critics of previous cognitivist representations,[5] the very notion that computation does something to the computed seems transversally accepted. But as perceived by the human eye, this process is additive. For us, computation creates information from information, adding something to the mix. From our

4. For a more comprehensive listing of the differents approaches on computation and their oppositions, see : Smith, Brian Cantwell. 2002. "The foundations of computing." In *Computationalism, new directions*, edited by Matthias Scheultz, 25–58. Minnesota: MIT Press.
5. Such as the linearity of input–treatment–output operations, or the exclusively algorithmic nature of said treatment. For a detailed presentation of postcognitivist theories, see : Penny, Simon. 2017. "The New Cognitive Science." In *Making Sense*, 193–213. Minnesota: MIT Press.

point of view, feedback resembles piling up, and a new version of a previous information is still a new information.

2.3. An Unending Process

As a performative process, computation stands as a neverending mechanism; even more so, it denies the possibility of ending. It emerges from its set of instructions — either a finite set of formalized operations involving symbolic tokens or the structural coupling of social interactions (Penny 2017) — and brings its *future future* (Morton 2013) realization into our present. Furthermore, when talking about computation as it happens in the myriad of digital computing devices surrounding us, one cannot ignore the tendency of computer science to go towards a distributed, continuous, ever-happening real-time model.[6] Such a technological trail has not been deemed interest-worthy by mere chance, but because it also corresponds to another influential idea regarding computers: that our brain might be just one.

In his seminal 1960 paper *Minds and Machines,*[7] Hilary Putnam expanded on his theory that the various mental states of the human mind could be "analogous to the internal states of a Turing Machine, [...] whereas brain states were analogous to the physical states of a hardware realization of a Turing Machine" (Piccinini 2004). Although the specifics of such analogies — and the whole functionalism theory that it gave birth to — have now widely been questioned (including by Putnam himself), the underlying idea of a resemblance between our (or any living organism) mental operations and a computer is still vivid; and minds do not stop. This question of mental continuity is even one of the main arguments for a distancing from digital computing as a set of rules that is executed sequentially on an input to produce an output, as we cannot pinpoint an exact moment in our flow of thought where one ends and the other starts. Cognition as a blueprint pleads, regardless of other criteria, for a continuous, self–enabling, constantly outputting model of computation.

2.4. Analog and Digital, Regarding Continuity

As this notion of continuous computation brings us closer to the next part of this paper, it is necessary to take a small detour and address the paradox of continuity regarding digital computation. Indeed, analog is inherently continuous while digital is inherently discrete (Massumi 2021, 145–156). While technically true, this argument must be set against the constant search in digital technologies

6. Examples of such a trend range from the overwhelming rise of online applications and activities, progressive web apps, ubiquitous computing and cloud computing.
7. Putnam, Hilary. 1960. "Minds and Machines" In *Dimensions of Mind: A Symposium*, edited by Sydney Hook USA: New York University Press.

for the emulation of analogue, particularly regarding continuity. An imperfect but useful metaphor would be that of the still image for a film: continuity as constructed by cycling through discrete elements fast enough. Whether we are talking about sound being computed at, at least, 44100 samples per second (before being converted back to analogical signal), visual refreshment rates going as high as 120fps in some cases, or information computation reaching speeds beyond our ability to keep up with them, digital tools are mostly capable of producing and outputting elements at rates that provides the illusion of continuity. Thus, if the ontological differences between analog and digital are very real and deserving of discussion, and while the granular aspect of any digital operation can be envisioned as an aesthetic element of its own,[8] the rest of this paper, when talking about continuous generation, will do so from the point of view of a human spectator, and assume it is perceived as such.

2.5. Computation + Art = Computational Art

Having defined what we talk about when we talk about computation — an information-based process that, from a human perspective, continuously keeps on producing new information, never stopping for as long as we let it run — the moment has come to conjure art pieces exhibiting that sort of behavior. One of such pieces is *How Computers Imagine Humans?* by João Martinho Moura (2017). An installation comprising two computers sitting face to face running real-time custom software, one generating visual geometric noise, and the other trying to identify human faces amidst it. As the artist's biography explicitly mentions an interest for "computational aesthetics", and the text accompanying the piece addressing issues regarding computation technologies, both in their operation and consequences, picking it as an example and source of reflections for this paper is self-justifying.

The second one, however, might need a bit more explanation. *Noise for the Nothing Unity* is a HNW project by Vomir (Romain Perrot), self–published on bandcamp.com in 2020. The only piece of literature regarding this piece being the small text that comes under it on the webpage (that will be discussed in more depths in the fourth part of this paper), and the artist himself never explicitly mentioning computation as one of his interests, one might ask why a computational reading would be relevant in this case. The first element of the answer is technical. Vomir has stated in an interview with *The Quietus* from 2014[9] that he grew dissatisfied with using a guitar and went for "electronic noise generators" and pedals. That is, focusing his entire

8. See, for example: audio granular synthesis, video data moshing, asynchronous web development.

9. Perrot, Romain. 2014. "Anti–Musicality: An Interview with Romain Perrot Of VOMIR." Interview by Russell Williams, *The Quietus*, August 20, 2014. https://thequietus.com/articles/16050–romain–perrot–vomir–interview–harsh–noise–wall

aesthetic around the sonic possibilities of either analog (tube–based "amps in a box", transistor circuitry) or digital (DSP and buffers) computing devices. Secondly, Vomir stands in this paper as a figurehead for the HNW movement, that is centered around exploring the aesthetic of a constant, continuous, unending mass of diversely treated white noise; which, given the definition of computation we are working with, is very much computational.

Using these pieces as entry points, what are their common elements that could help us define shards of a computational aesthetics? The first one would be their mutual use of the same source material: noise.

3. In the Absence of Noise, Would You Hear Anything?

3.1. What is Noise?

Noise is most simply defined as any signal, interruption, or disturbance in the channel of communication that alters the quantity or quality of transmitted information (Swensen 2011). As this definition explicitly mentions information, we immediately are in familiar territory, although it would seem at first glance that noise may be the natural enemy of computation. If computation is the process that literally makes sense out of the information, then noise stands as an opposing force, altering what is to come out of computation. As an unorganized state of information, noise is to be quickly sifted through, filtered out so that meaningful content can be picked up. The most famous examples of noise would tend to support this vision: if you still own a cathode TV, zap to an empty channel, here is noise. Tune a radio between stations, listen to the crackling static, here is noise, again. Funnily enough, that is how Vomir encourages people to first approach his sound and see if they might be interested in it.[10]

These examples, it should be noted, are of analog noise, pockets of in-between signals. Entire spans of no-content, filling the gaps between properly used frequencies for more worthy transmissions. Supposedly devoid of any interest, parasitic, even, when grains of noise spill over from these blank shores over our signals. This tendency from noise to spill over, the presence *en masse* of parasites in analog computing is one of the reasons that pushed the American Air Force (one of the most important funds providers regarding computational research in the twentieth century) (Penny 2017, 72-80) to transition to digital computing. Built upon a much more representational and internalist framework, digital computing was to get us rid of noise. By implementing at its core a Boolean logic reducing any possibilities to that of a binary 1 or 0, this technology got rid of the

10. ibid.

in–between, closed the gaps between meaningful content, promising to tighten it all up neatly. How is it, though, that as the complexity of digital computers grew and their use went on to permeate every domain of human activities, "generating noise signal [became] a basic procedure on computers"? (Moura 2017)

3.2. The Noise Is the Signal Is the Noise

This paper argues that the necessity of noise generation in almost every area of digital-based practices reveals an inherently flawed distinction between noise and signal. Following to some degree the brain in a vat (Harman 1973) scenario, a large portion of cognitivism posed the distinction between significant information and mere mechanical stimuli. It pushed for the idea of eliminating corporeal, nonsemantic elements, and focusing on operating upon symbolic abstract tokens. But such a hypothesis has been largely criticized and the definitive separation of reasoning from embodiment no longer withstands.[11] To rephrase it from our aesthetic perspective: "nonsemantics offer possibilities for interpretation" (Royston 2022), the noise and the signal are but one. The way we hold an object, the touch of a specific paper, the characteristic fizzling added by a vacuum tube, the granularity granted to any image by its printing or all conceptual decisions regarding a book's design are all noisy margins that we still mobilize in our perception.

3.3. The Quest for Digital Randomness

As an interesting sidestep, it should be noted that to achieve noise, digital computing need randomness; for noise can be mathematically represented as a group of random numbers without connections to each other. But as an embodiment of Boolean logic, digital computing cannot produce randomness. Simultaneously, the internist and representationalist philosophies of mind had conditioned digital computing to incarnate the body/mind dualism. Duplicating it as the hardware/software dualism, descendants of such schools of thought described the way computational operations are embodied and the tools they need to wield to execute as implementation details (Hutchins 2010). Yet, when randomness became such an essential part of computer science research (and is still, through cryptography, for example), one of the keys to achieve satisfying pseudo–random number generation (pRNG) algorithms laid in such details. The temperature of the CPU, the next vacant logical address in the computer's RAM or its ventilation speed, all that is considered as a noisy input became a source of arbitrarily chosen seeds for mathematical functions that would output random enough numbers.

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11. See: Cosmelli, Diego & Thompson, Evan. 2010. "Embodiment or envatment? Reflections on the bodily basis of consciousness" In *Enaction: Towards a New Paradigm for Cognitive Science*, edited by John Stewart, Olivier Gapenne & Ezequiel A. Di Paolo, USA: MIT Press.

When tasked with adding uncertainty, the digital went for the analog, the mind looked at the body.

3.4. Noise as *prima materia*

With analog computing producing noise as its inevitable corollary, and digital computing becoming ever so efficient at producing noise — and using it ever more — all of computation oozes with noise. Thus, as CA are to be understood from computation and investigate on it, the substance they wield and transform, their *prima materia*, regardless of any artistic medium they choose to wield it through (be it sound, installation, images, or film), is that noise. Where does that leave us, aesthetically speaking? With a take on CA as concerned with the non-discursive part of the discourse. With the outskirts of information-processing and meaning-creation. Within our hands a continuously self-creating boulder of chaos that should not be denied its chaotic nature at the cost of disconnecting one's CA from computation. Formally speaking, this conception turns to HNW as a quintessential implementation of computational aesthetics. Listening at *Noise for the Nothing Unity*, or *Mineral Synthesis*,[12] is to let oneself squashed by such a boulder. The former providing an example of constant non-evolution, while the latter varies across its running length, but without any form of transition, as if the computing system suddenly changed rules, using the same input to produce different outputs. Without this shift implying any sort of rhetorical evolution or narrativity. Computation in itself isn't about narration, as it does not have any sense of storytelling. It ingests, treats, and emits.

Derivative from this last phrase, noise as *prima materia* for CA also implies a behavioral aesthetic (Carvalhais 2022) that would center on the execution of a system, rather than its evaluation. CA is concerned with the incarnation of the computation, not so with its rhetorical demonstration. Hence, tying it with the definition of noise we gave, CA pieces do not stop to reflect on what's outputted, just as the end of a loop in Moura's piece only signifies the beginning of another. Since the filtering that brings meaning is not to be found on the computation side, but in the eye as in the "bones and brains" (MacIver 2009) of the one it is being computed for.

4. Coding Loops as Artistic Grammar

4.1. We Can Be (Loop) Heroes

Championing this notion of behavioral aesthetics, Simon Penny underlines the ontological difference of computational from traditional media on the basis of their performativity (2017). Real-time compu-

12. Black Matter Phantasm. 2016. "Mineral Synthesis". Accessed January 31, 2023. https://blackmatterphantasm.bandcamp.com/album/mineral-synthesis

tation brought us "dynamical, enactive and deictic" cultural entities that should be engaged with as such. Thus, if noise is the *prima materia* of computation, what are its instruments? Metaphorically, what would be the computational hammer and chisel? For starters, it needs not only to be a tool, but a self-wielding one. As we described computation as a dynamical process, perpetually self-enacting, its matching device cannot be static and externally activated. It needs to "push against the materials [as] the materials push back" (Mateas, quoted by Penny 2017).

Such a behavior, a perpetual reaction to constantly incoming information (whether outputted by another system, or one system's environment, or the system itself in a preceding run) is at the core of the cybernetic project and one of its central concepts: the feedback loop, i.e. analog computing systems are fundamentally circular tracks, putting noise through a series of embodied rules and operations, only to loop it back at the beginning. Regarding digital computation, loops are everywhere. As a collection of instructions to be linearly performed on data as long as specified, they are one of the most basic structure programming.[13] At the most fundamental level, any computer that is turned on is continuously executing its main loop, even if only to refresh its display, producing the illusion of stability through constant iteration; that is, running in circles until granted a specific task.

This ubiquity of loops in any form of computing, as well as its ability to maintain itself procedurally (Murray 2012), poses it as a particularly relevant structure for computational practices. Defining a loop, its enabling conditions, the various behavior it exhibits while running, and its iterative mechanism — how does it closes on itself at its start/end — appears, in this context, as a quintessential aesthetic gesture, thus putting forward the idea of loops as a most precious tool for the computational artist.

4.2. A Rapid Course in Programming Loops

For the rest of this paper, any mention of loops will more specifically concern programming loops in digital computing. This specific acceptance is, this paper argues, a valid and useful blueprint for reasoning upon the aesthetic underpinnings of loops in CA. Valid, because, as stated before, loops are ubiquitous to computation. Both analog and digital computing systems use loops, in the same self–enacted, possibly self-informing (feedback loops), and dynamic (analog as digital loops can both modify their own parameters) way.

13. Accompanied with functions and conditional statements. Oriented–object and other paradigms introduced many variations upon these concepts, which are beyond the scope of this paper. Still, even in such paradigms, loops occupy a fundamental position in coding (Van Roy 2012).

Useful, for the verbalization digital computing brings to the table. As code is a formalized performative language (Galloway 2006), its enacting conditions and operations are verbally laid down, which can be easier to grasp than the mechanical *bricolage* of analog computing. Once this precision is made, a rapid rundown on the two mains programming loops is necessary to clarify future concepts.

A *while* loop is one of the simplest forms of programming loops. It executes the code placed inside its body while a condition is met. It is based on a Boolean logic assertion that a statement is necessarily true or false, and so, that a condition such as: *while x is true* will either be met or not. Incorporating such a binary logic, while loops are also the most prone to error form of loops. They offer the most chances to fall into *infinite looping* (if based on a condition that will always be met, such as $0 < 1$), something that should be carefully avoided.

A *for* loop comes with an extra element of control. It is made of a body of instructions, but also a head that harbors a more detailed condition for it to run. The header is loaded with a loop variable that will traditionally serve as a counter for how many times the loop has run. The head also defines what should be done to the loop variable in–between each run (such as being incremented by one). Thanks to the presence of the head, *for* loops are much less prone to *infinite looping*, explicitly requiring you to provide a logic for the looping condition to either stop or maintain.

Finally, it should be noted that every variable declared inside both a *for* or a *while* loop is only accessible within that loop. Alternatively, it is often harder to access a value created or stocked outside the loop, from inside the loop, i.e., once engaged, the loop becomes the computing context, everything that is created there stays there, and everything prior to it can only be touched through referencing, not directly.

4.3. Iteration and Repetition

Such technical details are of importance because, in the context of CA, they inform our reading. As computational aesthetic is an aesthetic of behavior, such specificities are not only informative, but actively partake in our computational reading of the art pieces. Listening to a HNW, for once, is listening to a *while* loop where the condition has been purposefully set to plunge into infinite looping. As the frozen state of a program that keeps on perpetuating its own condition for not being able to move on, where a single fragment of execution has expanded its scope so much that any reference to anything outside of itself is abstruse, engaging with it on this basis helps connecting to the aesthetic of paralyzing self-saturation and paradoxical vacuum filling.

Simultaneously, *How Computers Image Humans?* quite literally shows us a computing loop happening right before us. As the first screen displays noise, the second one searches for faces in it, and displays a number of its findings before outputting a final visage, made from averaging the previous ones. The fixed number of faces appearing tends towards the structure of a for loop, much more contained, promising a less chaotic behavior and something that is much more iteration based. The operation unwinds in front of us, every time in the same order, at the same pace, but with a different result. The loop keeps on looping, but iteration is not repetition.

This distinction is not only a technical or rhetorical one. Iteration means that for every time the loop runs, it will result in something different. Same rules, possibly same input, but different outputs. Here one can make use of randomness, of noise, for producing ever changing content. Repetition would mean to enact the same behavior and have it repeatedly produce the same output, i.e., the faces in *How Computers Imagine Humans?* would all look the same, every time. Computation and loops can produce both of these behaviors, and it is up to the artist to enact either one of them.[14]

4.4. Recursivity and Refresh

On a micro-temporal scale, looking at both *How Computers Imagine Humans?* and a HNW piece, the question of recursivity and refreshing emerges, as does iteration and repetition on a macro-temporal scale. Recursivity is a constructive process. It is the closest incarnation of a feedback loop one can enacts digitally. It implies that something is kept from previous iterations to build upon. In Moura's piece, the final face is made of the recursive assembly of all the previous artifacts identified as facial features. They were all memorized for the duration of the present iteration of the macro-loop, stored as to be mobilized during the final calculation. In its computational framework, recursivity is supposedly closer to human experience, as we keep on executing the same functions on an evolving basis. We do not forget immediately what we learned from a previous installment, but rather use it to inform future cognition.

To refresh is a different, more "computomorphic" behavior. A defining mechanism for a certain type of digital memory, refresh has become a staple of computational language across the web. Refreshing means starting from scratch. To ignore any result of a previous computation, to forget all context in order to reconstruct it completely.[15] HNW refreshes, as an input of noise goes through

14. Or both, sequentially, or side–by–side, or any other configuration the artist wishes to deploy.
15. Several options to store and handle data are now available as to avoid such a drastic and systematic rebuilding. Still, as technical solutions aimed at saving time, they do not remove the possibility of truly refreshing the memory, nor do they change the nature of this process, so specifically computational.

the same constructed set of operations for each sample, without a trace of the one before, without constructing on anything, without remembering anything. Once again, to either enact one or the other depends on the artist. This is, as emanating directly from the structural conception of a computational loop, a foundational aspect of a computational behavior, i.e, a fundamental computational aesthetic choice. What kind of loop is the piece enacting? Does it deny the possibility of remembrance to the point where it forgets itself every time? Or is it storing previous states and reusing them, conducting a circular operation that builds on itself as to show the construction of a thought?

5. Object-Oriented Asceticism

5.1. No Retreat No Surrender

Now, stepping afar from the pieces' poiesis and into their rationales, a reading of both the text accompanying our selected works on their respective webpages helps circling a last element for our proposed computational aesthetic. One that is particularly concerned with the piece's reception, and what it is supposed to evoke.

João Martinho Moura's page for *How Computers Imagine Humans?* offers us a straightforward explanation of the piece's statement. A documental approach, detailing the technical choices made by the artist and their rhetorical purpose. The installation is centered around showing the quintessential human face as "imagined" by the computer (Moura 2017). Reversing, in doing so, the facial recognition technology, the piece is yet not, as highlighted by the artist, about the visuals it produces, but about the knowledge that underlies it. In this particular case, the "knowledge we, humans, try to implement into machines to detect ourselves". That is, de-anthropocentering the most anthropocentric pictorial element there is — the human face — and breaking it down to statistical operations upon randomly-generated noise. A particularly telling bit of interpretation comes from the three highlighted listed negations: "no soul, no history, no memory". The result of the showcased process is not the construction of someone's face, but the negation of it. Nothing here, not even the final output resembling a human figure, is humanistic. This is, after all, nothing but noise, and noise is all there is to see.

Regarding *Noise for the Nothing Unity*, a series of negations is all there is to read below the piece. Successively listing everything that will not be presented in this recording. From musical missing elements like "no minimal drones", "no tuning systems" or "no spectralism" to philosophic shattered hopes like "no purity", "no spiritual healing" or "no contemplation". This piece, as with all of it siblings (and in respect with HNW's manifesto, also written by Vomir)[16] is about denegation and withdrawal. The closest of the two studied pieces of this paper from a raw accounting of what is perpetually generated noise through constantly reset treatment, it embodies in the most brutal way an aesthetic of pure relationship without any expectations. Here even more than anywhere else, there is absolutely nothing to relate to, nothing but noise to hear.

5.2. Trying Not to Be So Bleak

Centered on denegation and withdrawal, it should be of no surprise to see Vomir's bandcamp page (where he stores and reissues a lot of his walls) displaying just a continuous grid of black squares as album covers. Accordingly, such a definition of CA and computational aesthetics as what have been provided in this paper can seem rather bleak. Hinging on a voluntarily cacophonous and chaotic matter, ostensibly offering nothing but the circular behavior of loops, they deprive us of a lot of traditionally satisfying narrative structures (Ong 1982). And stemming from computation, they can't ignore what computation is "in the wild" (Smith 2002), i.e., that most of what computation is made to be under the most influential actors of tech industries seem to lead us in a dystopian hellhole where our only hope would be to download ourselves in the cloud. But, as a somewhat optimistic counter opposition, a case can be made for CA as highlighting a fundamental flaw in our approach of "processes [that] are beings too" (Bogost 2014). That is, that our technological objects, and all of what we're surrounded with, have to say something about us.

5.3. To Look for Us In all the Wrong Places

Going back to computational fundamentals, computers were made under the cognitivist assumption that our minds worked following an internist and representationalist framework. Hence, according to mechanical explanation, these machines were to emulate our minds, and create a world isomorphic to our perception of it. Alas, as the failures and questioning of cognitivism led us to see, we did not know our minds that well (Penny 2017). And as the new, computational media infused every aspect of our lives, what we ended up with was a worldly, accidental megastructure (Bratton 2015), akin to a specific part of our cognition, but definitely not encompassing the whole of human umwelt. In this context, CA can be seen as implementing this structure's aesthetics, crystallizing it into precisely delimited moments of enacted behavior. It does not mean that they are anti or post humans, rather inhumans (Bogost 2014). Thus, producing noise and iterating through it will hardly correlate to a hu-

16. Vomir. Unknown date. "HNW MANIFESTO". Accessed January 31, 2023. https://www.decimationsociale.com/vomir-hnw-manifesto/

man experience, but offer a profoundly unsettling and potentially rewarding object-oriented ethological study.

6. Deafening Iterative Chaos as a Breath of Fresh Air

Concluding, it should be noted that the æsthetical proposition of this paper is obviously not the only way to approach CA. As living and debated as computation is, it generates new configurations for CA to embody every day. Still, in any shape or form, computational aesthetics may be hard to pinpoint because they bear a radical proposition: that of a relationship with inhuman behavior. Going back and expanding on our definition of noise, we could summarize it as every unsaid yet significant part of what is said, i.e, the perpetually excess-producing outskirts that harbors withdrawing realities (Harman 2002). To loop through it, then, would be a way for us to experience its *absolute contingency*: the ever-standing possibility for anything to be anything else (Meillassoux 2006). The proposition to relate to such a behavior through an art piece is an ambitious invitation. But it makes sense, in our computer-laden present, to respond to it. Computation may have failed at giving us a world made after our minds, but it still brought us objects to think with, "processes that are beings too" (Bogost 2014), even if definitely not human ones.

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