What About Knowledge? Agency and Proletarianization in Digital Environments

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The aim of this article is to investigate the affordances and aesthetics of collective agency in the contemporary digital environment with respect to the concepts of *knowledge* and *automation* in Bernard Stiegler's philosophy. Digital environments, and more specifically *digital cultural interfaces,* such as social media, news apps, streaming services, have a *form*, and, contrary to what the interfaces promote, this form is far from neutral or "natural" (Kangaskoski, "Logic of Selection"). The form encourages certain kinds of actions and modes of engagement while discouraging others and is driven with the energy of a specific business model. What is more, interfaces aim to automatically predict users' behavior and desire. I take this form, *the form of the environment*, to be aesthetic in the sense that it governs its users' senses, experience, and intellect—their sensibility. Viewed thus, aesthetics is also politics, a question of the sensibility of the "we," of a collection of actors. To what extent, then, does this aesthetic afford the time and processes that foster knowledge? To what extent does it enable agency, individual and collective? What kind of agency might that be? Are there better alternatives to the current forms of the digital environment? These are the questions I probe in this essay.

In doing so, I take the view that the possibility of knowledge is a necessary component of agency and that knowledge is essential in enabling participation—participation viewed generally, but also as participating in the aesthetic, in what Stiegler calls the "production of symbols" (*Symbolic Misery*, vol. 1 10).[1] Moreover, knowledge is intimately connected to retaining a past and projecting a future, being in a process of becoming, which can also be called *individuation*. I have previously argued that for a collective to form, it needs to be able to co-individuate, by which I mean that there should be a possibility of becoming something together, which requires time and space for that very becoming, whatever shape it may take, as well as the chance

1 "By symbolic misery I mean, therefore, the loss of individuation which results from the *loss of participation* in the *production of symbols*" (10). The symbols Stiegler refers to are both the symbols of intellectual life (concepts, ideas, theorems, knowledge) and sensible life (arts, know-how, mores).

of recognizing, processing and integrating (not erasing) differences or disparities (Kangaskoski, "Algorithmic We"). Here, in connection with knowledge, I parse the integration of disparities as tensions looking to be resolved. This resolve is always only temporary, a metastable equilibrium. This tension can be created by dissensus, complexity, obscurity—anything that is unfinished, disconnected, unclear—and for which there is desire to be resolved. Knowledge and individuation result from being able to *hold this tension unresolved* for a period of time in order to test its components, to understand and feel more about it, instead of collapsing the tension into predetermined, *automatic* categories. Automation tends to result in a loss of knowledge, which I here discuss as "proletarianization." Predetermination, calculation, and automation are important background concepts in their inverse relation to openness, fundamental noncalculability, and the possibility of knowledge.

I explore the possibility of collective agency, within these processes of knowledge and co-individuation and set in contrast with being *algorithmically interpellated*—automatically "hailed" (as in "Hey! Look at this artefact!") into an amorphous group in which the tension tends to collapse in preset, and often binary categories of like/dislike, for/against, us/them, and so on. Finally, the aspect of time is relevant as the automatic interpellation and the collapse of tension happen in an ever-renewing present moment, removed from the need of retaining a past or projecting a future, and collective agency, insofar as it is a process of individuation, necessarily has a past (as retained memories and traces) and a future (as the collective desire to imagine something beyond the present moment).

Knowledge and Automation

Let us begin small and investigate an exemplary site of knowledge, a tiny moment of writing. For now, this tiny moment serves as the theatre for the tension we are interested in. We shall then elaborate from the example of writing to the example of reading, eventually reaching collective measures. So, while I write this article, *these words*, one by one, letter by letter, on my computer in Microsoft Word, the program keeps automatically filling in predictions for words when I start to type. I can accept the prediction or I can continue typing letter by letter. This is the *present moment* of the example. But what happens within this moment of *my* writing and the *program's anticipation* of what I might write? The word I am typing is, evidently, connected to a broader structure—a sentence, a paragraph, and a section already written, *in the past*, as well as grammar and conventions. Some of it is, as of yet, unwritten, *in the future*. When I write, I hold this past and this future in a tension within the present moment, in the tension between what is written and what I want to still write. This tension, within the flow of consciousness, is conditioned by the past and by cultural and academic conventions, but it is not fully determined by them. The tension keeps

the future open to my knowledge and desire—my singularity as a writer as well as to the contingencies of the location and the situation of the writing. In other words, this moment is open to my knowledge and skill as well to chance, and as long as I am still thinking, it has not collapsed into any concrete result. The prediction of the program, on the contrary, has no tension, and no openness beyond what I bring to it by beginning to type. The offered word is a calculated probability, and it is offered as an automatic filling—to help me write. As a calculated probability it is a standardization, and as standardization, it has, by definition, nothing to do with my desire and singularity as a writer (and a being) nor with the local, specific context of the writing. The prediction draws from what John Cayley names the "orthotext": a cleaned-up version of language, purified from the noise of, say, raw Internet files as well as from embodied and situated practices of language. So, when I choose to accept the suggested word, I collapse the possibilities open to me into the orthotext and let the program resolve the tension *for me*: In this moment of accepting the automation I surrender holding (as attention) the past of the article in my mind (as retention) and I surrender the anticipation (as protention) of the future of the article in my mind; and, for this moment, I surrender the factual grammatical knowledge to the prewritten form as well as the creative skill of writing. This is a small, momentary surrender, and I have to again summon my desire and knowledge, the past and the future, when deciding what to type as the beginning of the next word.

This tension and its temporary resolve, therefore, is where and when knowledge may take place. The idea of tension in the present moment is strongly related to the idea of the flow of consciousness consisting of retentions and protentions (Stiegler, *Technics and Time*, vol. 3). Primary retention designates the present moment, including the "just past" of, for example, a melody. We retain the previous notes while listening to the present ones, and the melody only makes sense within this extended present. Secondary retentions are primary retentions faded into memory—the melody I heard yesterday. But we do not remember as such, instead we retain certain aspects of our present moment experience. Stiegler's addition to this phenomenological description of perception, stemming from Edmund Husserl, is tertiary retention, which is done by external artefacts, such as books, tools, and technology in more general terms. Retentions are coupled with corresponding protentions as anticipations of what may come next, either in the near future (we anticipate the next notes of the melody) or further on as predictions, hopes, dreams, desires. Also, tertiary retentions, as for example the program of Microsoft Word, may be able to have protentions, such as predicting the next suitable token.

Let us return to the moment of writing. In that moment, to be able to think and remember the past of the writing, and to be able to think and anticipate its future, and to know what I want to write, which words can be used to express it, beyond what is typical, expected, or correct; how to construct a sentence, beyond, again, what may be expected or governed by convention—this is knowledge beyond calcu-

lation, and writing beyond standardization. Knowledge, crucially, is not then just factual knowledge, the *knowing what*; I treat it, following Stiegler, differently to the "justified true belief" or propositional knowledge of "X knows that Y" from analytical philosophy (see Ichikawa; Jenkins; Steup). Knowledge includes *being able to do* and *knowing how*, and it is therefore also connected to skill. Stiegler typically speaks of knowledge of how to do (*savoir-faire*), how to live (*savoir-vivre*), and how to think (*savoir conceptualiser*) (e.g., *States of Shock* 15), which can be granulated further into practically infinite applications of artisanal, artistic, scientific, parenting etc. knowledges. This present moment, insofar as the tension is retained open to non-predetermined possibilities, is, of course, also the site of creative possibilities.

The collapse to and with automation, that *may* happen in that moment of writing, *may* lead to a loss of knowledge. For Stiegler, automation, as technology in general, is a *pharmakon*, both poison and remedy.[2] The auto-prediction of my writing is therefore neither good nor bad as such. It may be useful and constructive, but it may also be detrimental and destructive. The latter becomes the case when I begin to rely on the prediction, thus collapsing the field of possibilities into the calculated prediction, and thereby, moment to moment, lose my knowledge, for example, as ability to hold the tension of the possibilities open and to think about them. I may lose the know-how related to the possible words I would choose to write—including hearing the acoustic elements of language, its "evocalizations" (Stewart qtd. in Cayley)—and as the practical grammatical knowledge of what letters go into the word, which, in itself requires a past and a future as the preceding and succeeding words will determine its grammatical number and congruence.

Let us continue for one brief moment longer with this small example and note that the loss of knowledge results in *proletarianization* (Stiegler, *For a New Critique* 37–38). Proletarianization, of course, evokes a history of work and Marx's well-known formulations, but it is Stiegler's invention to re-emphasize that beyond alienation and class struggle, proletarianization is the process of losing knowledge through automation. In this way, a writer using automation with writing, irrespective of class and position, can lose their knowledge connected to writing, and become thus proletarianized. The same applies in other arenas of knowledge.

Broadening the small example of predicting and auto-filling words, Microsoft Word's writing assistant can give me an overall grade and granulate the text into, for example, correctness, grammar, clarity, problematic geopolitical references, and discriminating language. This is another facet of the orthotext: a tacitly normative version of language relying on norms considered neutral or neutrally good (as well

2 The pharmacology of technology is an over-arching theme in Stiegler's work, used in most of his writings. For a short explanation as a keyword in Ars Industrialis' website, see https://arsindustrialis.org/pharmakon. Ars industrialis is an "International association for the industrial politics of the spirit", founded in 2005 according to Stiegler's initiative.

as standards and conventions). The assistant may be useful for me in pointing out unintentional aspects of my writing, but in the same way as letting the individual word resolve automatically, relying on the assistant may also erode my ability to assess and decide for myself. I lose the knowledge of my own text to the point that I lose the sense of what is good, what may be good, or what I want it to be like; I surrender my *singularity* and *desire* with respect to this text. By "singularity" I mean—far from attempting to construct a mythical individual who acts independently from their environment—differentiation and individuation in the sense of becoming someone and not anyone. Becoming someone (but not someone *special*) is shown in a new light with respect to the digital environment, which tends to standardize into homogenous groups, while advertising individual choices. And by desire, I mean my will insofar as it *extends to the infinite and is never complete*, or to put it in an upper register, contrasted with my will as *drive* as it grabs a *finite object that can be fulfilled*. Daniel Ross uses an example that I find illuminating:

> [T]he satisfaction of the animal drive which we call hunger ends with the consumption of food, even if this drive is of course perpetually renewed. In the case of human desire, however, the object of my desire is always something singular, a singular process of individuation, whether that process is another human being, or a kind of knowledge or art, or way of living, and as a process of individuation it is necessarily and inevitably in-complete, and therefore infinite, endless. (6)

To summarize, desire is singular, because it is created through my past experiences and present knowledge (as ability, know-how, factual knowing, and sensibility), through which I project future possibilities that I wish to attend to.

Nevertheless, the case of Microsoft Word with its predictions and assistant may appear innocent. Is it really all that much? Let us then broaden the view into artificial intelligence, such as ChatGPT or other large language models (LLMs). These are only a step further in the automatic prediction and filling of the next token. I can ask the program to write entire texts, surrendering the whole broader picture of thinking and crafting to an automatic, standardized program, and first, lose the opportunity to learn, and then, gradually, lose the ability, know how, and desire to do so. In this way, I do not individuate, because I do not learn, and if I read what ChatGPT writes for me, I attend to the orthotext. It is not nothing, but it is, at least in my view, less. Letting an LLM craft a text for me from start to finish is a blunt example of potentially losing both theoretical knowledge and the ability to formulate it into writing. LLMs themselves do not have knowledge, they have data and protocols. They are modelling pre-existing texts token by token (one token may be just a part of a word) without singularity or desire, without past or future, based on statistical calculations and programmed norms. It is a model of the output of knowledge and

as such very impressive, but it is not knowledge itself in the sense I am construing here.

Of course, automation saves our time, and a long-lasting dream has been that this time can then be used for something else. Freed from work, we can become creative. This automation is, however, a pharmakon. Stiegler et al. suggest that the time and energy thus saved should be reinvested in new dis-automatisations and *noodiversity*, i.e. a diversity of new knowledges, or it may lead to proletarianization (Montévil et al.). I will come back to this thought at the end, but if we remain with the tension of potentially losing knowledge of how to write, conceptualize, and research, it is possible to see already here, preliminarily, how knowledge is connected to agency as the ability to act on one's own intentions. Without the knowledge and skill of writing, I do not have access to the practice of writing and everything connected to it and enabled by it.

Let us shift from the small moment of writing into a broader moment of reading and look at reading as an example case of the aesthetics of contemporary digital environments. The aesthetics of the digital environment govern the distribution of the sensible in a specific way, guiding its users to engage and create through its logic; a logic which attempts to appear neutral, and affordances, which attempt to pose as self-evidently good.

Reading and the Proletarianization of Sensibility

As I have tried to show, knowledge and individuation requires tension, and this tension is held unresolved, at least for some time, before it is resolved *by the knower*. Within this tension there is probing, investigation, analysis, synthesis, deliberation, weighing, gathering more evidence—anything that helps us understand what it is that we are probing. This tension is crucial also for reading. As Maryanne Wolf writes,

> [w]e seem to be moving as a society from a group of expert readers with uniquely personal, internal platforms of background knowledge to a group of expert readers who are increasingly dependent on similar, external servers of knowledge. I want to understand the consequences and costs of losing these uniquely formed internal sources of knowledge without losing sight of the extraordinary gifts of the abundant information now at our fingertips. (55)

Wolf describes the loss of singular and internal knowledge of reading due to dependency on external servers. Much of her concern stems from the pharmakon of the abundance of information which causes us to read with simplification, speed, and triage (75–76). It seems evident that in this environment the slower act of interpreta-

tion is left with less attention. I wish to connect interpretation here with the process of knowledge, as both advance through holding open the tension described in the first section, a tension resolved by understanding. Similarly to knowledge, interpretation is almost by definition open-ended, and interpretability, in literary works, is one of the most cherished features. Interpretation is the act of making sense of what a text says and connecting it to one's own experience as well as a broader context in the world. Interpretation deals with questions such as: what does it mean? What is it about? What did I feel when reading and why? Wolf describes the act of reading and interpretation in the following way: "[T]he information harvested from the text; the connections to our best thoughts and feelings; the critical conclusions gained; and then the uncharted leap into a cognitive space where we may upon occasion glimpse whole new thoughts" (64–65). Wolf parses the uncharted leap and the whole new thoughts further as the Heideggerian disclosing, as an aha-moment, or the moment when "an arms-wide expanse in the reader's mind opens up" (64–67). Analogously to knowledge, in literary interpretation the reader draws from their own past experience as well as the past (and after reading, the totality) of the poem, story or drama they are reading to draw singular insights—singular, but shareable.

For example, in Mallarmé's classic poem "A Roll of the Dice Will Never Abolish Chance" we begin by reading the following lines: "A roll of the dice / will never / even when thrown under eternal / circumstances / from the depths of a shipwreck" (3–5), and we continue coursing through the subsequent pages and lines set with various sizes and rhythms, reading from page to page and sometimes across the whole spread, piecing together possible connections among many. For example, the title line of the poem is pieced together from words that are highlighted by larger size throughout the poem: "a roll of the dice / will never / abolish / chance" (3–19). Mallarmé's text is notoriously "open." But open to what, exactly? Open to the possibility of understanding what is said in a singular way, i.e. one's own interpretation. For example, I might try to persuade the reader of this text to look at the roll of the dice from the perspective of the tension described in this essay. In the poem, we find a figure (the Master) who shuffles the dice in their fist, hesitating to roll them. Why hesitate? Because, in my interpretation, when the dice are not rolled, the potential of possibilities remains open. This is the space of the tension discussed here, the space for probing, testing, investigating, but not yet deciding. When the dice are rolled, we collapse the potential into something concrete, a word and a text in our example case of writing. However, as the poem suggests, even if the dice are rolled, the roll will never, even when thrown under eternal circumstances, abolish chance. We could read this non-abolishment of chance as the ensuing metastability which is never a real end but enables new potentials. The last line of the poem comes close to my reading, as it says that *all thought is a roll of the dice*, which in my interpretation would mean that all thought, and even more precisely in the writing example of

this essay, all words, when they are written, constitute a collapse of all the potential thoughts or words into one. *This*, for example. But then it begins again.

In other words, reading Mallarmé's poem we see how the act of reading also has the potential of holding open the tension of possible meanings, probing, investigating, gathering evidence, trying to connect them with each other into a possible cohesion. If we care to do this, we may learn something, provided we have the ability and knowledge to do so. Indeed, this kind of reading resembles what is sometimes called critical thought, and "[f]rom the standpoint of the reading brain," Wolf writes, "critical thought represents the full sum of the scientific-method processes" (62). Critical thought "synthesizes the text's content with our background knowledge, analogies, deductions, inductions, and inferences and then uses this synthesis to evaluate the author's underlying assumptions, interpretations, and conclusions" (62). What is more, Wolf sees critical reasoning as crucial in "inoculating" the next generation "against manipulative and superficial information" (62). However, "in a culture that rewards immediacy, ease, and efficiency, the demanding time and effort involved in developing all the aspects of critical thought make it an increasingly embattled entity" (62). Critical thought, as Wolf eloquently describes it, is of course knowledge as the knowing what and the knowing how. And if it is not developed or sustained, it may be lost. We are edging from the knowledge of the individual towards a more collective measure, as Wolf reports the thoughts of the literary scholar and teacher Mark Edmundson, who speaks of an absence of "any developed belief system" in young people. Edmundson thinks this is due to simply not knowing enough about the systems and not having the patience to find out and examine them (Wolf 63). In other words, from the perspective of the community of Edmundson's "young people" there is an intergenerational loss of knowledge. They have been proletarianized, which means that they do not have access into this area of society and life, nor do they have agency related to it. They cannot participate, let alone contribute.

But what have they been proletarianized by? Already mentioned in passing above, Wolf and many others see the attention span chopping, information overloading, and too fast-paced digital environment as the problem. I have myself argued elsewhere that the digital environment, as it is established now, has normalized and subsequently normativized certain aesthetic features for its artefacts. They include quick recognizability, discrete affectivity, and high compression, which are created through the pressure of the dominating business model, the number of available artefacts, and the material, processual, cognitive, and cultural affordances of the interfaces (see Kangaskoski, "Logic of Selection"; "Affordances of Reading"). These features cater to speed and a quick collapse of tension, i.e. the information-overloading fast pace. Moreover, the drive-based business model of contemporary digital interfaces is geared towards finite objects and immediate satisfaction in an ever-renewing present moment with less cultivation of infinite goals that draw from the past and imagine a future. There is no business model for infinite goals in

the current digital ecology. We do not need to dive deep into the question here—it is enough to say that within what has variously been parsed as the economy of attention,[3] surveillance capitalism (Zuboff), or platform capitalism (Srnicek); the logic is to try to make the user quickly select an offered artefact through algorithmic interpellation. The interpellation's motivation is to sell a product, maximize eyeballs for advertisers or make the user stay on the subscription-based interface.

How to make the user select the artefact? By capturing their sensibility with whatever drives them, and what drives them is predicted through the tracking, collecting, analyzing, and profiling of traces and other data provided, in aggregation with the same of their reference groups. Importantly, from the perspective of knowledge, I have argued elsewhere that insofar as the user is interpellated in this quick, affective, and compressed mode and insofar as the user engages in the same mode, the user also is acting and reacting automatically ("Logic of Selection"). In other words, the user is interpellated as an automaton whose reaction of like/dislike, love/hate, lust/disgust, sympathy/outrage is predicted through calculation.

The tentative answer to the question of what "young people" have been proletarianized by is therefore the logic and form of the digital interfaces whose aim it is to interpellate them as eyeballs for advertisers, thus normalizing a mode of attendance that makes it difficult to switch into the more patient and slowly rewarding mode of close reading and critical thought, i.e. practices of knowledge. And I think it is warranted to extend the analysis beyond Edmundson's "young people" to concern a broader group, at least those whose usage of digital interfaces constitute a major share of their waking life. In the world there are a little over five billion Internet users and a little under five billion social media users. The average daily time spent online in 2022 was six and a half hours (Kemp). The exact measure in which different segments of the world's population is influenced by the digital environment is beyond this article to establish, but these figures suggest that it is not an insignificant amount.

The Aesthetics of Collective Agency Governed by Digital Cultural Interfaces

So far, I have connected the logic and form of the digital environment to its aesthetics in two ways. First, its logic and form create a tacitly normative aesthetic, governing

3 As for the connection between attention and economy, I refer to the ideas of Georg Franck (see also Krieken) as well as Crogan and Kinsley. In the information overload attention becomes the rare resource. Andreas Hefti and Steve Heinke as well as Agnès Festré and Pierre Garrouste make a through interrogation on the issue between economy and attention.

what is suitable within its interfaces. This concerns how the interfaces present artefacts to us and their action potentials. Second, I have referred to aesthetics as sensibility and a mode of engagement with the interfaces. This concerns how we attend to them. *Aisthēsis*, following Stiegler, in its widest sense means sensory perception (*Symbolic Misery*, vol. 1 1), and therefore the question of aesthetics is "that of feeling and sensibility in general" (1). Digital interfaces govern the distribution of the sensible (*sensu* Ranciére), which can here be interpreted as tacitly teaching users, through habituation, what kinds of modes of attendance and types of artefacts *make sense*, are reasonable and pleasurable on the interfaces.[4] My aim in this section is to investigate how this sensibility relates to knowledge, automation, and agency. The hypothesis to be discussed is that sensibility, like knowledge, may also be proletarianized. This may happen through the reduction of the users' singularity into predictable profiles and through the attempt of bypassing their aesthetic, knowledgeable attention and favoring programmed reactions. Following this hypothesis, I argue that the user is interpellated as an *aesthetic automaton*, one whose selection and reactions should collapse automatically and quickly into preselected options. This interpellation is at once both individual and collective; I am interpellated as an individual, but at the same time I am hailed into a group of people "like me". Finally, I discuss what kind of agency is offered for an aesthetic automaton.

To think about the individual and the collective as they are automatically interpellated by the interfaces, I wish to bring in an analogy. The keyword for this analogy is *Gestell*, the Heideggerian term both for something that has been *enframed*, put in its place and treated as a standing reserve as well as a mode of ordering the world, and a mode of attending to it. *Gestell*, specifically, is the essence of technology (Heidegger, *The Question*). The analogy I wish to set up is the treatment of nature as something out there to be used; to treat, for instance, a natural forest as a standing reserve for construction, paper, firewood, recreation, and so on. In attending to it in this way, we put it in its place, separate it from its surroundings and its history, and we treat it as something calculable (how much is left) and something we can extract value from (how much it costs). Anything can, and has been, treated like this from animals to human animals, from the oceans to other planets and space. This is, arguably, the logic of the *Anthropocene*, where the planet has become a *Gestell*, and has led us to the downward spiral of the current ecosystems collapse.

When a digital application, such as Instagram, pops a notification on my mobile screen, it interpellates me as a calculable reserve from which value can be ex-

4 As David Panagia summarizes, "[k]ey to Rancière's understanding of a *partage du sensible* is the tension between a specific act of perception and its implicit reliance on preconstituted objects deemed worthy of perception." In my argument, digital interfaces, through their tacit normativity, influence precisely the *preconstitution of the objects deemed worthy of perception* that we then implicitly rely on.

tracted. The reserve here is attention which the application can turn into revenue. So, I have been *gestellt*, put in my place as "eyeballs," as consumer, user, viewer, customer, a market. I am also enframed by a group and put in my place within it, as I am interpellated based on the tracking, analysis, profiling, and prediction of my behavior. This profile is shared by everyone "like me," and so it is also a collective appeal, a grouping *Gestell*. Myself and people like me are addressed as a collection of calculable automatons.

Gestell is a mode of engagement and a reduction, a cutting off. A reductive compression of complexity and interconnectivity, and a reductive compression of time and space. This compression is very concrete in the case of mobile interfaces. A typical smart phone—which is the arena for the aesthetic experience in question, the *world at my fingertips*—presents its art and practice in small increments, one *screenful* at a time. Anything that hopes to catch the eye of the user must be similarly reduced, not only in sheer size but also in terms of the duration and depth of the tension it presumes.

Let us then recall that knowledge has a past, a present, and a future within the mind of the knower. The logic of the interface, however, is to reduce the time of the user into as close to the present moment as possible, and within that present moment, the user should become "your experience now," designating a momentary affective tone. We select this tone from preassembled menus or just by tapping the screen, making it as effortless as possible. In fact, we are constantly asked to like and select by touching, clicking and pushing buttons and icons. This isolated affect as *your experience* is what the market wants to predict and once actualized, use to offer more artefacts (see Kangaskoski, "Logic of Selection"). This quasi-automatic affective reaction is more predictable than the slower, deliberate choices, and thus easier to predict and govern—*quasi-automatic*, because it is automatic only insofar as the user acts as the interface prompts to act; there is always the potential to do otherwise. Interesting for our exploration is that this "experience," although it is often expressed as "your experience *today*," means *right now*, at this very present moment, unconnected with the past and the future. The aspect of experience meant here is unconnected from what *I think* as well as what might be *good* or *valuable* beyond my experience and beyond this moment. Connecting with the past and the future as well as with good or bad would require time to think about broader connections, holding the tension unresolved for a moment longer. But, as for the distribution of the sensible on the interfaces, this behavior does not make sense.

The logic of capture and *Gestell*, with its reduction of space and time required for knowledge, amount to the proletarianization of *sensibility* as the collapse of aesthetic attention into standardized and programmed responses (Stiegler, *Symbolic Misery*, vol. 1, e.g. 1–13; 46–48). It is *symbolic misery* to not be able to take part in the production of symbols and to lose the knowledge of how to attend to them. I lose access to a certain mode of aesthetic experience, just like the "young people" in Edmundson's

testimony. Crucially, it is not about being "informed" or not. What is lost is both the knowledge and the desire to know. Parsing it further, the aesthetic experience in question requires knowledge related to searching for, familiarizing with, and investigating an artefact, holding the interpretative tension open, which may result in understanding something about it, and this *something* would be both about the artefact and myself, since knowledge is the result of the tension between the artefact and my singular way of knowing. Lost with the singular ways of knowing, the diversity of knowledges, *noodiversity*, is also lost (Stiegler et al., *Bifurcate*). Stiegler and others (e.g., the Internation Collective, more of which below) sees this diversity of knowledges as a necessity for a society to function, analogous to the *biodiversity* that ecosystems need for functioning. Without knowledge, and through standard artefacts reacted to in predictable and discrete ways, there is no becoming diverse, but instead becoming the same. With regards to knowledge and automation, where automation collapses the potentials of the tension of possibilities into standardized options (e.g. the orthotext), we could call the capture of sensibility the *collapse* of sensibility into automated reactions. What kind of agency does the standing reserve, interpellated as an aesthetic automaton, have? What kind of chances are there for collective agency when the individuals composing the group do not know of each other and have no space nor time for becoming something together?

Experience shows that volumes of people can be mobilized through digital interfaces for a cause or even for a revolution, and these causes and revolutions may achieve their goal—to topple the government or to make a certain change. My example in "Algorithmic We" is the so-called social media revolution in Egypt, in which the group was successful at amassing a large volume of people to overthrow the government, but after the fallen government, another autocrat took power. I argue that in order for a collective to form, it needs to be able to co-individuate. In the case of collectives, it means becoming something together in a way that is specific to them and through being open to the tensions within the group as well as to the tensions brought about by the complexity of the issue at hand, overcoming those tensions in a metastable resolve. This means also the possibility of imagining the infinite, i.e. a future beyond the finite satisfaction of the immediate goal. I recently attended a mass demonstration, and in the capacity of a poet, also performed in the gathering. Over ten thousand people were mobilized against racism, specifically the racism in the current Finnish government parties. The demand of the demonstration was that the government take antiracist policies as an integral part of their government program. But, as it so happened that a few days before the demonstration the government in power published a program in which it committed itself to antiracist policies of its own making. Therefore, the immediate, finite goal of the demonstration was already fulfilled *before* the demonstration took place, however partially and unsatisfactorily. This did not stop the momentum of the demonstration, which by Finnish standards was a big gathering, but it did, again in my view, dissipate the finite demand.

For a collection of people to work together beyond this kind of finite end, it would need a past and a *future*. It requires a process where the past is the retained trace of becoming the collective. This already entails collective knowledge. The present is the process itself and the future is what it is able to project—what it *desires* based on its knowledge and singularity. This is in stark contrast with the affective reactions garnered on the interfaces as they are responses to what is offered in the present, served as personalized experience, but they are not reflective of *desires* of future outcomes. *Agency* comes from the ability to participate in and contribute to this future, which is the feeling that we *as a* collective are able and know how to create it. In Stiegler's thought, agency comes from the ability to participate, and participation is "a *passage from potential to act*, while the loss of participation is a *regression from act to potential*" (*Symbolic Misery*, vol. 2 25). Knowledge as ability and desire as will towards an infinite goal enable this passage to act. In contrast, an automaton cannot have agency, because an automaton has no desire as the will to imagine something that is not yet there or predicted, precisely as the writer, suspended between words, has the possibility to imagine the future of the text beyond the orthotext. Or the reader, who can hold the past of the text in their mind, and be able to think and feel in the space afforded by the open tension, and thereby able to project potential futures and meanings.

Conclusion: Absence of Epoch, Troubled Guardrails, and a Vision for the Role of Knowledge

Stiegler's concept of *epoch* designates a historical and societal situation where the shock of technological innovation, of which history knows many, is settled through learning to use the new technology and through understanding how it works (*Age of Disruption*). The shock of technological innovation creates the tension, which is resolved through learning and adjusting. This tension needs and takes time, and with this time, a metastable equilibrium is reached, after which something new can again come. Now, in the twenty-first century, we are still adjusting, are still within the shock caused by the commercial Internet from the 1990s, Web 2.0, and social media. New inventions, such as Open AI's ChatGPT, which, as the company announced in September 2023, is now able to use the Internet in real time for its recommendations and answers. In other words, with new inventions pouring in there is no time for adjustment on the individual or the collective scale, and thus Stiegler speaks of the *epoch of the absence of epoch* (10–18). The collective scale includes institutions, laws, education systems and practices, even public spaces and parenting. The societal scale of knowledge is rooted in institutions and practices, which are rooted in common policies, culture and history. This knowledge, too, is disrupted by the current technologies. On this note, António Guterres, the secretary-general of the UN, suggests

that we must replace the "move fast and break things" idea of Silicon Valley—the very ideology of disruption—with "move fast and mend things" (United Nations).

Within the same frame of thought, Stiegler calls our current situation "more than tragic" ("Machines of the Technosphere"). It is tragic because of the downward spiral of ecosystems, but it is more than tragic because, although we are aware of it and know what we should do to stop it, we seem to be unable to act to do so. The digital interfaces, amplifying mis- and disinformation, are no small part of this inability. Replacing the mantra of disruption with mending, caring, or knowledge has to push through the logic of the digital environment, which itself, having become "atmospheric" (Hansen) or "infrastructural" (Paasonen), is an integral part of the more than tragic situation.

To address this problem, the United Nations recently (in June 2023) published a policy brief aimed at formulating common guidelines or "guardrails" for what it terms *information integrity* on digital platforms.

> The danger cannot be overstated. Social media enabled hate speech and disinformation can lead to violence and death. The ability to disseminate large-scale disinformation to undermine scientifically established facts poses an existential risk to humanity (A/75/982, para. 26) and endangers democratic institutions and fundamental human rights. (3)

In more detail, hate speech "has been a precursor to atrocity crimes, including genocide" (9). Mis- and disinformation pose serious threats to the "global public" impacting health and mental health, climate action, democracy, elections, gender equality, security and humanitarian response. It has "severe implications for trust, safety, democracy and sustainable development" (11). Therefore, the policy brief proposes a regulatory model that highlights commitment to information integrity, respect for human rights, support for independent media, increased transparency, user empowerment, strengthened research and data access, scaled up responses, stronger disincentives (regarding the business model), and enhanced trust and safety (21).

In my view, this is a welcome proposal. However, when Guterres tweeted about the proposal, the more than tragic situation of conversation could not have become more starkly into view. In the comments, the proposal was met with disdain and construed as a ban for the freedom of speech, a conspiracy plot for suppressing the people and of the powerful elites imposing laws on free citizens. Hate speech in the form of ad hominem attacks was abundant. Many commentators professed the view that it is the individual's responsibility to not be affected by hate speech or disinformation, not the platform's problem. I am not convinced many of them read the policy brief (and why would they, since this is not part of the sensible on the interface). What the commentators seemed to share was the conviction that the digital environment, and here specifically social media, was "free" at present. Even if many

agreed that there is a lot of disinformation and hate speech, none of the comments I saw (there were over 4,000 comments as of 28 September 2023 and I have not performed a serious analysis of all of them) questioned the platform itself as a controlling agent, thus verifying the success of its tacit normativity. And this is, indeed, a feature of any normative environment, to fade from sight as a site of control. At the same time, the erosion of trust and information pollution that the policy brief wishes to address were abundantly performed in the comments of the Tweet. Digital cultural interfaces are a big part of the environment where knowledge and collective agency should take place, but at the moment, I think it is safe to say that this environment does not support a "deliberative ecology" that would make cooperation likely (Danisch).

I wish, however, to end on a positive note. In 2020, the Internation Collective, a group of some sixty scholars, artists, engineers and activists, published a volume called *Bifurcate: "There is no Alternative"* which was handed over to the UN as an urgent plea for an alternative view into contemporary society, including outlines and the theoretical and practical background for a *contributory economy*, *contributory research* and *contributory design*. In terms of the design of digital interfaces and taking the cue from urban studies (Sennett), the group promotes an "ethics of cooperation" as the creation of spaces where people can come together to meet each other and to discuss "the difficulties of everyday life" (Alombert et al. 181). Crucially, the cities within which such cooperative spaces may occur, should be open localities, "capable of being transformed over time and of hosting improbable events" (181–182). Speaking specifically about digital design, they point out that the design of digital platforms (here called interfaces) should be made adjustable according to local needs and knowledge, as contributory design, in stark contrast with the current model of fairly uniform and black-boxed platforms. For this end, they suggest "the design and development of contributory digital technologies, allowing individuals to express themselves and to stage confrontations between points of view, thus generating processes of discussion, debate and collective deliberation, which are constitutive of collective intelligence" (181).

This necessitates designs that take the singularity and locality of knowledges into account and contribute to designs that may be incomplete and unfinished, but, crucially, take into account the needs of the inhabitants and can be modified by the inhabitants themselves (182). In this way, the local inhabitants could participate in the design, use their knowledge and have agency in relation to their digital environment, resulting in a diversity of designs and a diversity of new kinds of knowledges.

Let us, then, conclude with a thought experiment involving such a design, even if only to a minimal degree. Let us imagine a web page, an app, a shop, or any service, that, instead of trying to extract the affective momentary tone of "your experience now" expressed as selections from preset emoticons, asks: "What are your thoughts on this? Is this good?" Implied in the latter question would be good for the individual

and good for the collective. In this fantasy there would be time, space, and desire to answer. Taking this kind of feedback into account, be it writing or, say, a voice message, would be laborious because it cannot be automatized; someone would have to think about it. However, the argument could be made that investing in caring for this kind of feedback might have good returns in the long run, due to the diversity of knowledges of the customers, based on which products, services and design could be developed. This would, of course, already presuppose that the business goal is to make the goods *good*, and this would practically be possible in a society that valorizes contribution instead of extraction. The valorization of contribution through knowledge would also be the reason why the customer would take their time to give that feedback.

Is this pure fantasy? The Internation Collective argues that these kinds of contributory acts are in fact not only a choice between X or Y models, but that the extractive model simply does not work and effectively ruins its own conditions, of which the Anthropocene and the destructive aspects of the digital environment are evidence. The collective argues that for a system such as a human society to function, it needs to be able to *bifurcate*, that is, to invent new, improbable means of work, art, practices, politics, and so on. This is, again, the diversity of knowledges, tied to localities. This kind of system is open to outside influence and able to integrate it into its workings through invention, whereas a closed system, which all automated systems are, is doomed to perform its own entropy towards disintegration. The extractive logic works only if it is possible to move on to the next resource after depleting the existing one, as if nothing had happened. We know now that this is not possible.

I hope to have shown that knowledge cannot be automated, but can be lost through automation. And when lost, it results in proletarianization and the loss of participation, not to mention contribution. Digital interfaces, as they are currently set, favor automation and do not foster knowledge practices in their design. These have negative implications for agency in the individual and collective levels. However, the sheer example of the Internation Collective, a group capable of imagining, researching, discussing, agreeing and arguing for an alternative vision with highly developed theory and concrete suggestions, is evidence of strong collective agency and the possibility of change. One of the main features in their suggestion is that knowledge, in all its many possible forms from practical to artisanal, and from theoretical to artistic, sporting, juridical and spiritual, is necessary for communities, and part of the diversity of these knowledges comes from their being singular and local. This example, to me, among many others, shows that there certainly is thinking and imagining beyond standardization. And that however ubiquitous, the effect of automation is not predetermined, which is something I have tried to emphasize in this essay by consistently using the word "may" instead of "will" when speaking of the effects of automation. The future, by the same token, is not set, and therefore it may also be one of diversity of knowledges.

Works Cited

Alombert, Anne, Vincent Puig, and Bernard Stiegler. "Contributory Design and Deliberative Digital Technologies: Towards Social Generativity." *Bifurcate: "There is no Alternative,"* edited by Bernard Stiegler with the Internation Collective, translated by Daniel Ross, Open Humanities Press, 2021, pp. 178–94.

Ars Industrialis. "Pharmakon (pharmacologie)." *Ars Industrialis*, https://arsindustrialis.org/pharmakon. Accessed 7 March 2024.

Cayley, John. "Modelit: eliterature à la (language) mode(l)." *Electronic Book Review*, 2 July 2023, https://doi.org/10.7273/2bdk-ng31.

Crogan, Patrick, and Samuel Kinsley. "Paying Attention: Towards a Critique of the Attention Economy." *Culture Machine*, vol. 13, 2012, pp. 1–29.

Danisch, Robert. "Rhetorical Structures, Deliberative Ecologies, and the Conditions for Democratic Argumentation." *Argumentation,* vol. 34, 2020, pp. 339–353, https://doi.org/10.1007/s10503-019-09496-w.

Festré, Agnès, and Pierre Garrouste. "The 'Economics of Attention': A History of Economic Thought Perspective." *OEconomia: History, Methodology, Philosophy*, vol. 5, no. 1, 2015, pp. 3–36, https://doi.org/10.4000/oeconomia.1139.

Franck, Georg. "The Economy of Attention." *Journal of Sociology*, vol. 55, no 1, 2019, pp. 8–19, https://doi.org/10.1177/1440783318811778.

Hansen, Mark B.N. *Feed Forward: On the Future of Twenty-First-Century Media*. University of Chicago Press, 2015.

Hefti, Andreas, and Steve Heinke. "On the Economics of Superabundant Information and Scarce Attention." *OEconomia: History, Methodology, Philosophy,* vol. 5, no.1, 2015, pp. 37–76, https://doi.org/10.4000/oeconomia.1104.

Heidegger, Martin. *The Question Concerning Technology and Other Essays*, translated and with an introduction by William Lovitt, Garland Publishing, 1977.

Ichikawa, Jonathan Jenkins, and Matthias Steup. "The Analysis of Knowledge." *The Stanford Encyclopedia of Philosophy* (Summer 2018 Edition), edited by Edward N. Zalta, https://plato.stanford.edu/archives/sum2018/entries/knowledge-analysis/. Accessed 29 November 2023.

Kangaskoski, Matti. *Reading Digital Poetry: Interface, Interaction, and Interpretation*. Unigrafia, 2017.

—. "Affordances of Reading Poetry on Digital and Print Platforms—Logic of Selection vs. Close Reading in Stephanie Strickland's 'V-Project'." *Image [&] Narrative*, vol. 20, no. 2, 2019, pp. 35–50.

—. "Algorithmic We: Belonging in the Age of Digital Media." *Style,* vol. 54, no. 1, 2020, pp. 36–47.

—. "Logic of Selection and Poetics of Cultural Interfaces: A Literature of Full Automation?" *The Ethos of Digital Environments: Technology, Literary Theory and Philoso-*

phy, edited by Susanna Lindberg and Hanna-Riikka Roine, Routledge, 2021, pp. 77–97.

—. "Digitaalisten kulttuurikäyttöliittymien piilevä normatiivisuus. Kirjallisuuden muuttuva poetiikka." *AVAIN – Kirjallisuudentutkimuksen Aikakauslehti*, vol. 18, no. 2, 2021, pp. 28–49. https://doi.org/10.30665/av.107876.

Kemp, Simon. "Digital 2023: Global Overview Report." *Datareportal*, 26 January 2023, https://datareportal.com/reports/digital-2023-global-overview-report. Accessed 29 November 2023.

Krieken, Robert van. "Georg Franck's 'The Economy of Attention': Mental Capitalism and the Struggle for Attention." *Journal of Sociology*, vol. 55, no. 1, 2019, pp. 3–7, https://doi.org/10.1177/1440783318812111.

Mallarmé, Stéphane. *A Roll of the Dice Will Never Abolish Chance*, translated by Robert Bononno and Jeff Clark. Wave Books, 2015.

Montévil, Maël, Bernard Stiegler, Giuseppe Longo, Ana Soto, and Carlos Sonnenschein. "Anthropocene, Exosomatization and Negentropy." *Bifurcate: "There is no Alternative,"* edited by Bernard Stiegler with the Internation Collective, translated by Daniel Ross, Open Humanities Press, 2021, pp. 45–62.

Paasonen, Susanna. *Dependent, Distracted, Bored: Affective Formations in Networked Media*, MIT Press, 2021.

Panagia, David. "'Partage du Sensible': The Distribution of the Sensible." *Jacques Ranciere: Key Concepts*, edited by Jean-Philippe Deranty, Routledge, 2014, pp. 95–103.

Ross, Daniel. "Introduction." *The Neganthropocene,* edited, translated, and with an introduction by Daniel Ross. Open Humanities Press, 2018, pp. 7–32.

—. "Politics and Aesthetics, or, Transformations of Aristotle in Bernard Stiegler." *Transformations: Journal of Media & Culture*, no. 17, 2009, http://www.transformationsjournal.org/wp-content/uploads/2017/01/Ross_Trans17.pdf. Accessed 29 November 2023.

Srnicek, Nick. *Platform Capitalism*. Polity Press, 2016.

Stiegler, Bernard. *Technics and Time, 1: The Fault of Epimetheus,* translated by Richard Beardsworth and George Collins, Stanford University Press, 1998.

—. *Technics and Time, 2: Disorientation,* translated by Stephen Barker, Stanford University Press, 2009.

—. *Technics and Time, 3: Cinematic Time and the Question of Malaise*, translated by Stephen Baker. Stanford University Press, 2011.

—. *For a New Critique of Political Economy.* Polity Press, 2010.

—. *Symbolic Misery, Volume 1: The Hyperindustrial Epoch,* translated by Barnaby Norman, Polity Press, 2014.

—. *Symbolic Misery, Volume 2: The Katasprophē of the Sensible,* translated by Barnaby Norman, Polity Press, 2015.

—. *States of Shock: Stupidity and Knowledge in the 21st Century*. Polity Press, 2015.

—. *The Neganthropocene*, edited, translated, and with an introduction by Daniel Ross, Open Humanities Press, 2018.

—. *The Age of Disruption: Technology and Madness in Computational Capitalism*. Polity Press, 2019.

—. "Machines of the Technosphere: The Role of Morality in the Biosphere According to Arnold Toynbee and the New Genealogy of Morality." Lecture, 7 March 2019, Helsinki, translated by Daniel Ross, https://www.academia.edu/45187207/Bernard_Stiegler_Machines_of_the_Technosphere_2019. Accessed 29 November 2023.

—, with the Internation Collective, editors. *Bifurcate: "There is no Alternative,"* translated by Daniel Ross, Open Humanities Press, 2021.

United Nations. *Our Common Agenda: Policy Brief 8. Information Integrity on Digital Platforms.* United Nations, 2023, https://indonesia.un.org/en/236014-our-common-agenda-policy-brief-8-information-integrity-digital-platforms. Accessed 29 November 2023

Wolf, Maryanne. *Reader, Come Home: The Reading Brain in a Digital World*. HarperCollins, 2019.

Zuboff, Shoshana. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power.* Public Affairs, 2019.