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Education and the dislike society: The impossibility of learning in filter bubbles

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ABSTRACT

As we begin to witness a new phase in the integration of digital social media platforms with educational institutions, we ought to ask how learning exchanges may be altered as a result. Looking to transformations in knowledge exchanges outside of formal education, we find that these technologies have already modified the ways in which communities engage with each other. Gerlitz and Helmond explain that the Like Economy built into all major social media platforms flattens exchanges between users to engagement metrics. With online communities increasingly isolated from each other thanks to inscrutable recommendation algorithms, the most frequent cross-community exchanges manifest in outbursts of rage, producing a so-called 'Dislike Society'. Practitioners would rather briefly unite to tear down other ways of living than to build new ones. Within the Dislike Society, any form of knowledge that could shape new communities is lost to the governance of algorithms in what Bernard Stiegler calls 'proletarianisation'. To re-apply knowledge to the improvement of life, as suggested by Whitehead, the attention of learners needs to be shaped in response to new technological conditions. This is best achieved within the educational institutions that now face a reorganisation by the same companies that brought us the Dislike Society.

Introduction

Whilst educational institutions have seen creeping integration of external software and digital platforms for years, the recent COVID-19 pandemic has accelerated the reliance on commercial-grade, pre-packaged products like Zoom, Microsoft 365 and G-Suite. This current stage of 'zoomified' learning is merely the latest, albeit accelerated, phase in a larger development that sees learning processes, both inside and outside traditional learning institutions, subsumed to exchanges dictated by Silicon Valley companies. The allure of simplicity in familiar software to structure and deliver education comes at the price of control, for teachers and learners, over the learning exchanges they have with each other.

Outside of brick-and-mortar institutions, the knowledge that stitches society together is already being ravaged by an economy that prioritises 'engagement' over the livelihoods of individuals and their communities. Carolin Gerlitz and Anne Helmond explain how this 'Like economy' reduces our online exchanges to engagement metrics in order to monetise them. Groups

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of users are closed off in so-called 'filter bubbles', where recommendation models ensure they primarily view small variations on the same content. The means by which to build new communities in order to live better is externalised in opaque algorithms and thereby produces a loss of that knowledge, which Bernard Stiegler refers to as 'proletarianisation' (Stiegler, 2013, loc. 2479).

The result is a phenomenon of ever more fractious online-offline interactions that we might collectively term the Dislike Society. It is at the heart of rising hatred between established communities and partially responsible for the failure of political movements to provide lasting alternatives to inadequate ways of life. For example, whilst the Brexit referendum succeeded in unifying a narrow majority of UK citizens from separate political spheres against EU membership, we are yet to see any viable alternatives to it. Within the Dislike Society, hate becomes the primary mode of communication between communities who increasingly view each other as existential threats. Now, this phenomenon that is built into the systems we use to communicate is poised to also take over exchanges within educational institutions.

Countries like the UK are directing teachers towards companies like Microsoft and Google (Department for Education, 2020). However, the promise of pre-packaged, feature-rich suites of familiar tools threatens to reproduce the Dislike Society within the institutions best equipped to supplant it. The solution is not to abandon all digital platforms but to close the gap between society and its new technologies by placing users in control of community-building processes. This paper examines what these processes are.

Hyper-segmentation and the Like economy

If our social interactions are so strongly governed by Silicon Valley, it is because of the immense structuring power its technology possesses. It is a process that has been set in motion since before Silicon Valley and before digital media. It is bound up with our consumption-based economy and digital social media merely represents the current pinnacle in corporations' ability to manipulate a market governed by consumer behaviour.

Antoinette Rouvroy and Thomas Berns explain how the algorithms employed by digital platforms instantly and automatically group together and separate users in a process called 'hyper-segmentation' (2013, p. 176). What this means is that users experience a specialised and accelerated version of what Bernard Stiegler identifies as 'hyper-synchronisation'. Hyper-synchronisation is a strategy from broadcast era marketing that exposes consumers to the same content en masse to level out behaviours, leaving no room for local deviation (Stiegler, 2010, p. 44). Hyper-segmentation gives the illusion of greater freedom from an external perspective. However, any local deviation in a grouping of consumers merely places that consumer in a different grouping. The scope of a group's probable interactions is already accounted for by what Rouvroy and Berns call 'algorithmic governmentality'. Algorithms present users with content that reaffirms those predicted behaviours, creating positive feedback loops where, e.g. Star Wars fans buy Star Wars merchandise because all their friends and favourite influencers keep reminding them of Star Wars. This creates what Eli Pariser calls 'filter bubbles'.

By tailoring online content to fit our recorded and processed affiliations, algorithmic governmentality generates enclosed spheres of users who struggle to encounter the content from bubbles they are not associated with. What this produces is hyper-synchronisation within filter bubbles. These small worlds within which we are placed automatically can seem mostly 'cosy', insofar as they consist of our favourite content and are mostly free of any views that might bring our own into question (Pariser, 2011, p. 11). Creating digital environments filled with content we affiliate with is the basic premise of the 'Like economy' identified by Carolin Gerlitz and Anne Helmond. They recount how Facebook's developers established a monetisation model that places it at the forefront of digital marketing. It improved upon Google's hit and link economy (that gives priority to sites that are more frequently linked to by others) by adding a dimension of

'sociality and connectivity to create an infrastructure in which social interactivity and user affects are instantly turned into valuable consumer data' (Gerlitz & Helmond, 2013, p. 2). By digitally capturing our relationships, the Like economy monetises affiliation.

After the success of its one-dimensional Like button, Facebook introduced Reactions in 2016, adding five new possible ways of interacting with content. Today, Reactions give us seven ways of expressing affective feedback online, yet, as far as Facebook is concerned, these are only seven ways of communicating the same thing: engagement. A product manager at Facebook explained that the platform 'will initially use any Reaction similar to a Like to infer that you want to see more of that type of content' (Krug, 2016). Since then, little has changed. Facebook's recommendation algorithms remain opaque and pressing the 'angry' Reaction still counts as a Like. The Like economy has spread far beyond Facebook and is a staple of social media platforms. Some have more overt forms of 'negative' engagement. YouTube has Like and Dislike buttons for its videos and although little is officially published, consensus among creators is that both Likes and Dislikes promote content as identical markers for engagement.[1]

Exclusively positive forms of engagement may seem to align with Facebook's outlook on bringing people together in happy unity, however Gerlitz and Helmond point out that the recording of negative relationships does not fit with Facebook's algorithmic model based on positive connections (Gerlitz & Helmond, 2013, p. 15). Whilst the resulting filter bubbles might be largely cosy, models exclusively based on positive relationships may not be ideal for learning. It is fair to suggest, however, that online engagement is often less than amiable, in spite of social media's best efforts. Far from being a mere design flaw, it could be argued that mass outpourings of hate and online bullying are direct consequences of the Like economy.

How to make a dislike society

In *So You've Been Publicly Shamed* (2016), the journalist Jon Ronson describes how waves of public shaming can grip social media platforms and seemingly reach across filter bubbles to unite users in opposition. He interviews Justine Sacco, head of public relations for the publishing firm IAC who became the target of such an attack in 2013 after tweeting an unpopular joke before boarding a flight to Cape Town: 'Going to Africa. Hope I don't get AIDS. Just kidding. I'm white!' (p. 64). Branded an irredeemable racist, Sacco lost her job before she turned her smartphone on after landing. Explaining herself after the fact, Sacco states that 'living in America puts us in a bit of a bubble when it comes to what is going on in the Third World. I was making fun of that bubble' (p. 69). Whether or not this was indeed Sacco's original intention, the tweet was worded ambiguously enough that she had no chance to react to an initial outcry.

This emphasises a key point about filter bubbles. They feel like safe spaces because they are filled with similar content. Sacco's followers would not respond negatively to her "jokes" because they either agreed or never saw them. However, that one post was suddenly distributed to other Twitter filter bubbles thanks to journalists like Sam Biddle, who shared it to their followers (p. 73). Beyond simply having more eyes on her gauche tweet, this meant that Sacco was judged within the norms of other filter bubbles, by users who would never exchange in that way and would not find her funny. Her 'cosy', safe environment was replaced with an unforgiving one that judged her free of context. Misunderstood or not, Sacco's tweet would have been impossible to defend within the new bubbles it was shared to.

By design, each bubble only allows for restricted diversity in its forms of exchange. These forms of exchange are not controlled by the users. First of all, Gerlitz and Helmond observe that platforms limit possible exchanges at the level of the interface. Second, Hui and Halpin have remarked that the network, as the online model for society, also imposes rigid determinations on the ways in which we interact, by treating each essentialised individual as a node, as well as the content they share (Hui & Halpin, 2013, pp. 105–106). This leaves no scope for Gilbert

Simondon's concept of psychic and collective individuation, which rejects the notion of the individual as a pre-conceived, atomistic unit in favour of a focus on the process. According to Simondon, internal, psychic individuation and external, collective individuation are reciprocal and are co-constitutive (Simondon, 2005, p. 29). This means that our cognitive transformations are mediated by our environments and we transform them in turn. Yet the environment in question is the social network, which cannot be modified or repurposed by the individual. Conversely, the network is perpetually defining us as fixed digital constructs, comprised of binary affiliations measured by engagement.

On Twitter, what constitutes racism or white privilege is inconsequential. You either are a racist, or you are not. Each user is placed into a category based on Like economy algorithms outside of their control. Each positive or constructive exchange is neatly categorised by an algorithm and assigned to a filter bubble. As a consequence, if a user's affiliations no longer match their bubble, they are promptly assigned a new one. This leads to very little deviation in relationships within each bubble. What this also means is that content from outside the bubble is met with hostility because it is at odds with the prescribed relationships already in place. This does not mean that content is no longer spread. As negative reactions to it are measured as engagement, the node in question gains connections and can be recommended to other users who would otherwise not encounter anything like it in their environments. This can create a Cambrian explosion of hatred, producing exchanges across filter bubbles that would not arise out of positive affiliation. The Like economy, which hands control of affiliations and socially constructive exchanges over to inscrutable algorithms, is the main driver behind what might be more aptly named the Dislike Society.

Disruption: Knowledge in the dislike society

In December 2018, YouTube published *Rewind*, its annual video tribute to its content creators. As of writing, it remains the most disliked video in the history of the platform. It was produced to celebrate YouTube's diversity of content, the talent of its creators and to briefly unify consumers from different online factions around one video. In spite of its 14% approval rating, it is still a very successful piece of content, currently counting 208.5 million views (YouTube, 2018). This figure still compares somewhat closely with the most watched *YouTube Rewind* videos of all: *2016* and *2017*, with 239 and 235 million views respectively. By contrast, their approval ratings seem much better, with 87% and 66% each. *Rewind* 2018 is a good example of the Dislike Society at work: consumers from separate bubbles uniting against specific content on social media.

Aside from its reception, 2018s video differed from the other two in another way. Whilst they portrayed different content creators teaming up for long dance routines, *2018* had creators separately express their thoughts on various issues they connected with, including creativity, society, culture and mental health. This forced established exchanges from diverse bubbles into each other, meeting with the inevitable disapproval discussed above. This does not by any means imply that different cultures or filter bubbles cannot or should not connect with each other in constructive ways. However, a perfunctory collision of symbols does not substitute for the negotiations between ideas necessary to create new knowledge and thus, new communities. We can observe similar juxtapositions that fail to produce unity in contemporary politics.

Engaging in large political debates today inevitably entails an encounter with the Dislike Society. From Donald Trump's promises to drain the swamp and wall off Mexico, to Brexiteers' hopes of escaping EU sovereignty; from Extinction Rebellion's protests against ineffective responses to climate change to the Gilets Jaunes' marches against the French State: in spite of their differences, they share a unification of their otherwise politically fractured supporters around attempts at dismantling existing systems. Beyond joining in opposition, these

communities rarely communally build alternative ways of living. The UK still has no trade deal. The climate is still collapsing. Donald Trump still regularly contradicts himself. This is how Bernard Stiegler's interpretation of proletarianisation may reveal itself. We are incapable of knowing how to live differently, let alone better.

Dislike Societies are prone to this loss of knowledge because they systematically prevent 'consensus'. Consensus goes beyond agreeing on how not to live and establishes how to live both differently and better. To understand what this means, we must explore Thomas Kuhn's analysis of the history of knowledge via paradigms. Kuhn sees knowledge as a constantly changing process. We are most familiar with the stage of this process called 'normal science'. Normal science relies on consensus among peers, who agree on 'the same rules and standards for scientific practice' (Kuhn, 1996, p. 11). In normal science, researchers have agreed on the best exchanges with their environment to make new discoveries. The same is true of filter bubbles, where users learn the exchanges that their peers use to live within that environment. These norms can be anything from a shared vocabulary to 'life hacks'. The difference is that in filter bubbles, the algorithm is in charge of who your peers are and what exchanges they share.

Thomas Kuhn and Paul Feyerabend also examine the 'incommensurability' between paradigms, which means that they 'cannot be used simultaneously and neither logical nor perceptual connections can be established between them' (Feyerabend, 1993, p. 169). Incommensurability means that paradigms cannot communicate or be compared with each other. Algorithmic governmentality fosters incommensurability between filter bubbles by habituating users to an accepted set of exchanges within their bubbles. The exchanges from other bubbles may make little to no sense to them. For example, addressing an adult as 'honey', 'girl' or 'bitch' may have very different connotations for the conservative Joe Rogan fan community, when compared with the LGBTQ+ RuPaul fan community.[2]

Incommensurability is the irreconcilable gap between types of consensus and the main reason why paradigms of knowledge do not change gradually but suddenly shift. Paradigms remain relatively stable until 'an existing paradigm has ceased to function adequately in the exploration of an aspect of nature to which that paradigm itself had previously led the way' (Kuhn, 1996, p. 92). When an environment is sufficiently perturbed that the paradigms that used to govern exchanges within it no longer allow practitioners to explain (or live in) it, a crisis occurs. Simondon's concept of individuation is similar in that an individual is considered as a process going through successive phases together with its associated environment. The coupling of individual-environment sets up exchanges that make up that phase of individuation. When changes occur in this coupling that render that phase inadequate for sustaining life, then a phase shift occurs (Simondon, 2005, pp. 65-66). Each phase is 'metastable' because it contains within it the potential for a renewed shift.

The Dislike Society is generative of crises because in spite of filter bubbles it lets incommensurable content slip through, producing outrage. Outrage is the only possible response because users are so conditioned to the exchanges within their own environments that they cannot communicate with others effectively. The violence of hate mobs is testimony to the fact that communication is unwanted. However, crises are important to knowledge processes because they are preludes to a revolution, or phase shift. Paul Feyerabend confirms that rigid stability of knowledge 'indicates that we have failed [...] to rise to a higher stage of consciousness and of understanding. It is even questionable whether we can still claim to possess knowledge in such a state' (Feyerabend, 1970, p. 30). Revolutions require crises and yet, instead of initiating a process of 'retooling' (Kuhn, 1996, p. 76) within knowledge, outbursts of hate in the Dislike Society are only followed by a sedated return to the bubble's habitual exchanges. For Stiegler, the imperative for retooling in a crisis is quite literal.

Stiegler explains that a moment of crisis that can give rise to a paradigm shift always coincides with the emergence of a new 'pharmakon' (Stiegler, 2018b, p. 103). Stiegler's concept of pharmacology indicates the simultaneously curative and toxic potential of technics. The

pharmakon of digital social media contains within it the curative potential to connect people and ideas to produce new forms of knowledge. In 2020 and beyond, we can connect learners in spite of needs for social distancing. We can question ways of living collectively and establish new ones without dismantling democracy and leaving nothing in its place. Georges Canguilhem asserts that pathological existence is not necessarily the loss of old norms by which to live but the inability to establish new ones in their wake (Canguilhem, 1966, p. 91). This theory is strongly aligned with Feyerabend's call for the flexibility necessary to create new knowledge. The tools to encourage it are available, yet we are locked out of them. Instead of algorithms that encourage hatred and destruction, we could use them to channel those collective forces into creating new norms that benefit new ways of life. In order to do this, we need to collectively be involved in retooling, rather than adopting pre-packaged and fully externalised structures of exchange. However, as Stiegler argues in *Dans la disruption* (2016), this short circuiting of processes of knowledge creation is the business model of digital consumer capitalism.

Going beyond Gerlitz and Helmond's Like economy, Stiegler explains that digital social media automatically captures all traces of its users' digital memories and uses it to disrupt or short circuit their desires (Stiegler, 2016, p. 23). These desires, hopes and expectations are what we use to invest in a future for ourselves, both on a personal and collective level. The speed and access granted to algorithmic governmentality means that we stand no chance of establishing new norms before it inserts itself. If we express interest in climate change through our online exchanges, we are more likely to be put in contact with adverts for electric cars and paper straws than with people with whom we could discuss green lifestyles and plans for political climate action. Without access to the algorithms that govern these exchanges, we will always struggle with the self-insertion of the Like economy.

Manipulation on this scale can give rise to the sentiment that our affiliations are no longer our own. Scrolling through our tailored content and advertising, whose lines of division are becoming increasingly blurred, we may occasionally pause and wonder what online engagement caused us to suddenly see so many adverts for dental products. As consumers become more and more aware of their own manipulation, they may begin to unconsciously recognise that the only thing that truly belongs to them is their hate. In the Dislike Society, despising each other is an assertion of free will. To heal from this toxicity in digital social media, we need to engage in long processes of reconstructive knowledge to produce new methods of harnessing it to more curative ends. We will need to narrow what is called the *dis-adjustment* between social and technical systems. Bertrand Gille originally observed this need for institutions and society to catch up after technological shifts (Gille, 1978, p. 1018). Stiegler expands on this idea, integrating it with Simondon's analysis of phase shifts. Dis-adjustment characterises the period of crisis between paradigms, where institutions of the old paradigm can no longer keep up with, nor re-integrate technological change (Stiegler, 2016, p. 32). If crises are initiated by the emergence of new pharmacological technologies that initially suspend existing ways of living, then the inability to repurpose those technologies within new modes of exchange hinders our exit out of crisis. This places new importance on the regulation of digital social media that seems so difficult to achieve.

Education in service of life

We are still reeling from digital social media's interference in democratic elections and referendums. Its involvement in spreading fake news and alternative facts is being discussed in popular media like Netflix's recent airing of *The Social Dilemma*. Even contestants on the BBC's *The Rap Game UK* are choosing social network addiction as subject material for their performances (Jacobs, 2020). Yet not only are governments unable or unwilling to regulate the influence these platforms have, the Like economy is poised to disrupt education. The relationships between

learners, their teachers and educational content can be subsumed into the same models utilised by Facebook and its peers. This is not specific to the recent phenomenon of 'zoomification'. Most Massive Open Online Courses (MOOCs) use the same network design as discussed by Hui and Halpin, often with the same engagement metrics and algorithmic processing as employed by major Silicon Valley companies. Khan Academy, one of the biggest platforms for online education grew out of YouTube. Some digital education tools like Moodle's virtual learning environment (VLE) are more mindful of disruption, by releasing their source code, permitting teachers to produce local adaptations in accordance with their needs. However, even these often contain vestiges of algorithmic governmentality, like machine learning models to predict course dropout instead of preventing it by having learners co-structure their courses (Moodle, n.d.). It is also doubtful on the whole that learners and teachers are strongly involved in the construction of these online environments. With IT staff setting up the structure of online components for most courses, there seems to be little difference in just adopting the pre-packaged systems offered by Microsoft and Google, along with their attractive offers of cloud storage. One way or another, educational institutions will have to re-appropriate the pharmakon of digital social media in order to produce new norms.

However, disruption is never exclusively cured with knowledge in the form of heteronomous modes of exchange. As discussed, one of the key hallmarks of the Dislike Society is its outbursts of generalised opposition against content shared across filter bubbles. It does not allow for new norms to be established in response to the needs of new online-offline co-created localities and rigidly maintains the filter bubbles produced by its algorithms. As Stiegler confirms, the destruction of local knowledge by standardising ways of living has also undermined the institutions that teach us how to mediate between different types of knowledge (Stiegler, 2010, p. 58). This does not mean that educational reform must abandon all forms of technical innovation. On the contrary, Bernard Stiegler defends technics as 'the pursuit of life by means other than life' (Stiegler, 2018a, p. 164) and yet it is simultaneously toxic, in that it can encourage the externalisation of knowledge without a subsequent re-internalisation that would transform it (Stiegler, 2013, loc. 1492). What educational institutions must achieve in order to escape the disruption this causes, is to rebuild around new modes of environmental exchange that promote life. Stiegler builds his recommendations on this matter by turning to a thermodynamic understanding of life. What interests us in particular, is the implication it has for the notion of locality and the digital platforms that seek to erase it.

Maximum thermodynamic entropy is the final state of the universe, in which all energy will be evenly distributed. Life is impossible at the point of maximum entropy because all chemical reactions will have ceased. It is a state of equilibrium. At the universal scale, all matter, including inorganic matter, is tending towards maximum entropy, or death. As Schrödinger remarks however, when life is considered at the local scale, it is able to stave off death by absorbing into itself negative entropy via metabolic exchange (Schrödinger, 1992, pp. 69–71). He explains that negative entropy is order, whilst entropy, the state of equilibrium, is disorder. To live is to know how to order one's environment to create a beneficial imbalance of energies. In Bernard Stiegler's terms, this means finding new knowledge in the form of local 'negentropic' exchanges that run counter to the entropy of disruption (Stiegler, 2015, pp. 29–33). Knowledge of local exchanges in one environment may not be helpful in another. This presents a strong argument against the imposition of current digital platforms in education. Most are not designed to allow for exchanges to be restructured locally, nor have we learned how to successfully apply them to our specific environments if they were. Instead, any local structuring of exchanges is short circuited by the flattening universality of Facebook, Google or Microsoft.

Alfred North Whitehead also thinks of knowledge in terms of its enhancement of life. The type of knowledge we have mostly discussed so far corresponds to Whitehead's notion of 'methodology', which satisfies the urge 'to live, to live well, to live better' and can be understood as a 'dodge to live' (Whitehead, 1971, p. 18). Within each environment, there may be different

methodologies or norms that help its members live better. Collectively, we might group them under the umbrella of paradigms. Therefore, this knowledge requires another kind of knowledge that helps select the best norms by which to live. It bears repeating that shifts in an environment can lead to sudden inadequacies of methodologies to fulfil the promise of a good life and therefore an encounter with new ones can be curative, in the sense that Canguilhem describes it. The Dislike Society permits this but only in the toxic or entropic way that does not encourage the local transformation of paradigms through the adoption of those new methodologies. Instead, different ways of living are attacked, even if they permit members of other environments to live well.

The knowledge that helps mediate different methodologies, selecting relevant new ones and trying them out, is what Whitehead calls *Reason*:

> The essence of Reason in its lowliest forms is its judgments upon flashes of novelty, of novelty in immediate realization and of novelty which is relevant to appetition but not yet to action. In the stabilized life there is no room for Reason. (Whitehead, 1971, p. 20)

Whitehead's Reason produces negative entropy because it creates order out of chaotic exchanges with an environment. It allows the learner to curatively respond to *appetition*, which is the attention we grant to the new, similar to the perpetual distractions of the Dislike Society (Whitehead, 1971, p. 21). Reason identifies new beneficial methodologies, whilst filtering out the noise. In this sense, it is directly opposed to The Dislike Society, which automates this process, excluding learners from it. The anti-life algorithms of the Like economy promote entropy by choosing our affiliations for us, yet fail to dampen outpourings of hate and abuse. Whilst the social models they create may be very orderly to algorithms, the users themselves have no access to them and are only left with apparently chaotic relationships within their environments. The learner is unable to re-order exchanges for themselves.

Bernard Stiegler also offers an analysis of reason that places emphasis on its negentropic value. Whilst he does not call it a form of knowledge outright, he explains that reason is learned (Stiegler, 2012, pp. 245–246). According to him, the role of educational institutions is to shape the attention of learners. He views reason as a historical iteration of the broader category of attentional forms, which are closer to what Whitehead calls Reason. For Stiegler, reason is but one attentional form among many. It is not something we inherently possess and indeed, as is currently happening as a result of disruption, we can un-learn it. Stiegler explains that the threat posed by economies of disruption is nothing less than the loss of reason (Stiegler, 2016, p. 71). As with Whitehead's Reason, attentional forms serve the negentropic purpose of putting methodologies to work in service of life. Stiegler takes the extra step to propose that even attentional forms change with time and may no longer suit particular technical environments.

The most comprehensive analysis of appetition-fuelled addiction to stimulation in dis-adjusted environments comes from Gerald Moore. He links Chad Wellmon's observation of the development of critical philosophy out of "eighteenth-century fears of book addiction" with an analysis of Plato's academy emerging as a response to "the intoxicating automations of writing" (Moore, 2019, pp. 120–121). Moore explains that attempts at environmental reorganisation in moments of crisis occur due to our processes of experiential learning. This entails focusing on the dominant stimuli within this environment, which usually emanate from the technical systems that initiated the dis-adjustment. Attentional forms help us mediate the neuronal input from appetition. However, if our attentional forms were acquired during a previous phase of metastable relationships with technical environments, they may no longer adequately respond to the new relationships resulting from the dis-adjusted technical systems. What this means is that we need educating in how to establish new methodologies within dis-adjusted technical systems that goes beyond the education we received from previous systems. Plato's academy could adequately respond to the new technical systems of writing, whereas Kant's critical philosophy

could respond to print technology. Each phase shift produced an explosion of stimuli that we had to learn to incorporate into ways of living.

Moore explains that learning to re-organise relationships with our environments is built into our neurobiology thanks to the brain's dopamine reward system. The triggering of dopamine reinforces learned *short-term* responses to stimuli that help us to (momentarily) live better, which also explains the mechanism behind Whitehead's notion of appetition. According to Moore, addiction is a side effect of short-circuited learning: neuronal pruning focuses on the strongest stimuli and desensitisation demands ever greater stimulation. These combine to create a runaway effect of addiction (Moore, 2019, pp. 122–123). The 'addict' sees their world narrowed around the stimulus that triggers their dopamine response. This phenomenon could further explain the Dislike Society's effectiveness at keeping society segmented, offering a different type of addictive stimulus for each set of consumers. Their attentions become so narrowed that they respond violently and abusively to anything that does not fit into their dopamine reward cycle. Inducing states of dependency on their products on a massive scale by triggering our learning processes, which Moore calls 'dopamining' (Moore, 2017, p. 68), has greatly benefited Silicon Valley companies. Their direct input into educational institutions will see the completion of that project.

Because addiction and learning are part of the same neurobiological process, Moore is able to assert that not all addictions are toxic (Moore, 2019, p. 121). His call for an increase in 'noodiversity' does not ask for an end to stimulation but for a balancing of local stimulus against the excesses of dopamining (Moore 2018). Even some of the processes found in the Dislike Society could be put to use. Once disapproval shakes us out of our filter bubbles into a shared communal space of practitioners wanting to live better, we need to find ways of working together long enough to locally generate negative entropy and thus, new ways of living. Whilst educational communities are to develop locally, they should still be able to exchange and evolve on a global scale to prevent stagnation. In this regard it may be helpful to consider Geert Lovink's proposal of 'stacktivism', which establishes interconnected technical systems on multiple layers, where the local influences the global and vice versa (Lovink, 2019, pp. 72–76). This way, communities could produce local ways of living, whilst still engaging with large scale issues like climate change and the COVID-19 pandemic.

The need for social distancing in 2020 may have encouraged educational institutions and their members to adopt user friendly, universalising tools to continue learning at a time when society at large is beginning to wake up to their side effects. As we cease wondering if digital social media is good for us and begin wondering how we can make something better without access to the code that makes it work, education must step in to provide solutions locally that can exchange globally. Whilst adopting pre-existing platforms or ones developed *for* (not by) learners and teachers might seem like a temptingly quick fix at this critical stage, their simplicity is designed to short circuit long term local solutions. We are running out of time to collectively create ways of living that benefit us instead of feeding the Dislike Society. As can ironically be heard in *YouTube Rewind 2017*, 'vivre ensemble c'est bien, construire ensemble c'est encore mieux'. This time we need to take it literally and begin building together.

Notes

1. One of the platform's most popular creators, MrBeast, conducted a small-scale experiment showing how a Disliked video tends to be promoted over one without engagement: https://www.youtube.com/watch?v=Om4c4ilT_6g
2. https://youtu.be/OOOcJGar2zI?t=365

Disclosure statement

Notes on contributor

Benjamin Herm-Morris, my interest in continental philosophy developed during my Modern and Medieval Languages undergraduate studies at the University of Cambridge. Professor Martin Crowley took notice of my fascination with digital learning tools and directed me towards the thought of Bernard Stiegler. Fascinated, I proceeded to write my first bachelor thesis on the French philosopher, entitled: *Poison and Cure, Bernard Stiegler and the Pharmacology of New Media*. This marked the beginning of my interest in the future of education and technics, leading to my subsequent MA in Digital Culture and Society at King's College London. It was during this time that I met Dr Gerald Moore, who was to become the supervisor of my PhD at the University of Durham. I am currently completing my PhD thesis on reintegrating contribution into digital learning practices.

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