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Parameters of Media Engagement

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Abstract

Engagement is a tricky term to pin down, shifting meaning in the media industries, across political communication and within popular culture. But the definition of engagement matters, as new currencies circulate in academic and industry discourses. The argument put forward here is that media engagement is a term that has been used in a strategic way within the media industries to capture social media analytics and ratings performance, thus instrumentally using a reductive meaning of engagement as a measurement of interest. We argue for a new definition of the term as an energising internal force; engagement is a subjective experience, protean in character, driven by affect yet always retaining some elements of rationality. We theorize media engagement as linking the personal, the socio-cultural, and the political, and these elements serve as a horizon in the parameters of media engagement. A matrix of five parameters offers a model for analysing engagement in relation to media contexts, motivations, modalities, intensities, and consequences. The parameters of media engagement highlight the trajectories of engagement, including the build up to engagement, the moment and place of engagement itself, and also what happens beyond engagement, such as participation and social activism, or fan production and user generated content. This way of conceptualising and contextualising media engagement offers analytic purchase for empirical research and reflexive theorisation that is attentive to the nexus of relations at the heart of engagement. We illustrate the empirical utility of this theoretical trajectory with an example from professional wrestling and populism. In such a way, media engagement can be a useful analytic term to map and understand how and why engagement matters to people in the context of political and cultural spheres.

Keywords
media engagement, political engagement, civic cultures, participation, audience engagement, public spheres, popular culture, professional wrestling
What is media engagement? Building on previous research on media engagement and civic cultures (see Dahlgren, 2009; 2013; Hill, 2017; 2018) our aim is to develop a nuanced conceptual understanding of what media engagement is and why it matters within political and cultural spheres. We theorize engagement as something more than attention, user interaction, or brand loyalty; typical definitions within the media industries. When engagement happens it is a powerful subjective experience. Engagement is an energizing internal force; rooted in affect and identity, it is a subjective disposition that can propel us to do things. We understand engagement as a nexus of relations that operate at both the individual and collective level; often there is a dynamic that renders the two levels mutually supportive. Thus, engagement is a process whereby we develop relationships with media that are not solely about consumption and economic value, but that also enable us to participate in politics, to recognise the social and cultural, as well as economic, values of media in our lived experiences.

The term engagement points to the various ways we encounter and experience media within politics, society, and culture. This broad horizon of media engagement means that the concept is coloured by a number of research traditions, from, for example, political science, sociology, cultural studies, various currents in business and advertising, psychology, and media and communication studies itself. Our perspective of engagement situates an understanding of the concept within human experience, rooting the term within work on affect, subjectivity and identity. Our perspective also acknowledges that engagement (and disengagement) always in some way touches upon what Mouffe (2005; 2012) calls ‘the political’ – i.e. engagement and its affective dynamics are readily intertwined with various force-fields of power and collective conflict in society, even if these relations are not always overtly visible. The protean character of engagement across political and popular cultural spheres is key to our model for the parameters of media engagement.

In the three sections that follow below, we first present the conceptual building blocks of our understanding of engagement as a nexus of relationships, highlighting the various elements it embodies. In the second section we provide a matrix of five parameters that offers a new model for mapping and analysing media engagement in context. The parameters include media contexts, motivations, modalities, intensities,
and consequences. The parameters highlight the spatial and temporal trajectories of engagement, including the build up to engagement, the moment and place of engagement itself, and also what happens beyond engagement, such as participation and social activism, or fan production and user generated content. As such, the five parameters highlight media engagement as a nexus of relations we make and break with media in everyday life.

The third and final section offers a brief analysis of populism in professional wrestling in order to address the five parameters of engagement across political and cultural spheres. We consider how professional wrestlers shape the cultural experiences of a live match through an invitation to engage in positive and negative ways with contemporary political culture and the rise of populism in Europe. Here the personal, the socio-cultural, and the political all link up in a media engagement that is attentive to live events and the subjective power of human experience.

**Meanings of Engagement**

The play off between engagement as performance metric and subjective experience is a sign of the tensions around the meaning of the term within the media industries and academic research. In recent work on media industries and engagement (see Hill and Steemers, 2017; Hill, 2018; Evans, 2019 amongst others), we find a strategic use of engagement as a performance indicator for economic targets. This is a rather reductive meaning of the term, where engagement is something to capture and measure in specific places (platforms, channels, or influencer profiles) and at certain times (hourly, daily, weekly leaderboards). Ratings, social media analytics, and newspaper reviews are the primary ways of measuring audience engagement as a basic definition of interest. And yet engagement is so much more than the public’s interest in something, as it captures people’s subjective positions, such as producers creating content that engages us, professionals promoting and marketing content for mass and niche audiences, and fans, producers and users experiencing media content.

Our article makes an intervention into this industry definition of media engagement by arguing for a meaning of the term not merely as a measurement of interest, attention, or consumption. In today’s media landscape, the growing power of
algorithms shapes our experience of software and platforms, generating content suggestions, nudging behaviour patterns, and generically labelling media for our attentive engagement (Bucher, 2018). As abundance and speed increases the competition for attention, and as the media environment becomes denser, the odds of getting and holding attention to any message generally decreases – with long-range and as yet not fully understood consequences for not only engagement, but also memory, cognitive skills, self-reflection, and more. As we develop personal strategies for navigating the daily tsunami of information, ‘infoglut’ as Andrejevic (2013) calls it, ‘distraction’ and ‘disengagement’ become less the antithesis of attention and more of an attribute: media attention is increasingly characterized by (disjointed) seriality (Jackson, 2009). Pettman (2016) argues that the speed of social media also fragments us into ever-smaller micro-zones of attentive engagement, be it fandom or political tribes.

Media attention and engagement are entangled with various empirical and theoretical notions about consumption. Our focus on media engagement sets certain limits on the possible domains of relevance regarding consumption, yet consumption still offers an array of pertinent interfaces. Commercial logics are most obvious: engagement can point to market relations that offer us that which we need to survive and that which we might desire: the promise of satisfaction and pleasure. It is most commonly exemplified by the many forms of advertising, shopping and commercial variants of entertainment, from engaging TV ads to product-pushing online ‘influences’. Consumption intertwines with mediated popular culture, and – even if less obviously so – with politics as well, as work by Michielleti (2003) and Sassatelli (2007) has highlighted. There can be political and ethical motivations for consumption, and a commercial and civic mix intertwined in such modes of engagement.

Whilst work in attention economies, algorithmic logics, and citizen-consumer research are relevant to media industry definitions of engagement, we want to move beyond these meanings which tend to prioritise quantitative data and economic targets towards a sense of engagement as offering socio-cultural value. Recent work by Evans (2019) on engagement for transmedia content offers a promising line of
inquiry in the ways producers and audiences of screen devices value engagement. Our interest in experience is at the point where it shapes engagement:

It is the experiences, both shaping and shaped, which variously precede, inform and then follow media engagements that are often the real matter at issue. Research into media engagement is often, if only partly, an inquiry into the realm of the experiential and its contemporary cultural resources, with all the challenges that implies (Corner, 2017: 5).

As Corner (2017: 5) has shown, by opening up the meaning of engagement as human experience we can use the term as a resource for living, a means to improve the conditions for social and cultural equality.

The vocabulary of emotions and feelings is slippery and problematic, as Frosh (2011), a psychologist well-versed in social theory, underscores. We use emotion and experience in largely descriptive, common-sense ways, while we see affect as a theoretically more ambitious notion. Media engagement is an emotional experience that can embody, for example, moral passion, resentment, pleasure, curiosity, fear, anxiety, anger, humour, and not least identity processes – which in turn relate to the subjectivity of the self, both individual and collective. For Frosh (2009) there are roughly speaking two kinds of experiences: the lived reality of the moment, and our thoughts, feelings and sensory responses within the experience itself; and then the memories of our experience, what stays with us, what we archive and talk about and reflect on after the experience itself. These ways of understanding experience intertwine with each other over time, so this becomes a process of experiencing reality and reflecting on our experience of reality, which sometimes can be in harmony and at other times in conflict with each other.

In recent years the notion of ‘affect’ has gained prominence; there has emerged an ‘affective turn’ in the humanities and social sciences, inspired by Spinoza, among others (see for example Massumi, 2002; Gregg and Seigworth, 2010). In media studies, Papacharissi (2014) has incorporated and mobilized the term for analyses of social media. She suggests that the term helps us to analyse modes of political engagement that hover beyond formalized expressions of opinion. Moreover, it indicates how unformed and spontaneous political sentiment may accumulate,
moving from the latent to the manifest, giving new shape to engagement and participation. In simple terms, if emotion is a ‘state’ one is in, affect has to do with the dynamics of how one got there.

The significance of affect can be understood if we think of engagement as shaped by something more powerful than just feelings inside the hearts of individuals, namely shared social experience. Thus, affect brings in the collective side of emotions, and derives from the work of several specific authors, as Papacharissi (2014) describes. One source that she emphasizes is Raymond Williams and his notion of ‘structures of feeling’. According to Sharma and Tygstrup (2015: 2) the idea of structures of feeling ‘compliments the analysis of the social and material infrastructure of reality with a third layer: that of affective infrastructure.’ They go on to suggest that affectivity is ‘what tinges or colours the way in which we take part in the environments we find ourselves placed into’ (2015: 14). For Williams (1978), structures of feeling give expression to prevailing cultural currents and moods of a given historical moment; they are implicit and inchoate, yet can still impact on people’s political horizons. Their political character can of course vary greatly; they can unfortunately even manifest unsavoury sentiments (e.g. populism). Affect, in sum, can be seen as dynamic, collective emotionality that connects with people’s shared social experiences; affect animates engagement and helps motivate participation.

If engagement is seen as a subjective disposition, participation can be treated as observable behaviour, i.e. forms of doing. Thus, the subjective state of engagement can be treated as a prerequisite for observable acts of participation (for further discussion see Dahlgren, 2009). Participation, basically, is comprised of forms of social practices. Shove, Pantzar & Watson (2012) theorize practices as consisting of the complex mobilization, coordination and not least transformation of pertinent elements that include materials (e.g. media devices), competences (skills) and social meaning. From this horizon, it is easy to see the role of subjective engagement in foregrounding participation.

It is of course very possible that any given state of engagement does not necessarily result in what would be considered political and cultural participation, or that the actors themselves may deem their engagement as constituting participation (while
others – for example, researchers – may not). While some citizens participate in the media with the aim of altering their policies, regulation, and/or financing – via various stakeholder organizations and regulatory bodies – such engagement is a slow and often frustrating investment of energy. Even in regard to the internet, despite the communicative freedom it affords, users remain, in structural terms, subordinate providers of data for the tech giants, with little potential for impact (Zuboff, 2019).

In sum, while engagement is largely seen as an affective experience, it always also incorporates some elements associated with the cognitive functions of the mind, such as forms of analysis, calculation, and argumentation, and so on. Indeed, the balance and dynamic between the affective and cognitive will vary, and often provide fruitful analytic insight on the affective and cognitive work of engagement (see Corner, 2011). For example, interviewees can express their engagement in emotional terms, but they also provide reasons for why they are engaged with a particular media phenomenon (regardless of how we might evaluate the quality of the reasoning). Emotion and reason are always, to varying degrees, co-present and active in human agency, not least concerning engagement.

Liberal democratic theory has long had a problem with emotion and affect, and strived to filter it out, leaving an analytic perspective of purely rational political actors (Hall, 2005). This attempt to return to a pre-Freudian model of the psyche has proven to be a dead-end, both in politics and culture. In the study of political communication and even in the voting process, some scholars have now come to underscore the importance of emotion (see, for example, Coleman, 2013; Wahl-Jorgensen 2019). Ultimately, politics and culture – as well as subjectivity itself – straddle the rational-emotional distinction, without safety nets, and engagement can be understood as in part predicated on the tensions between them. Trying to deny one side or the other merely hinders our understanding of human agency.

Political and Popular Cultural Spheres

The notion of ‘spheres’ of course depicts not a geographic terrain (or some round-shaped entity), but rather sets of institutional structures, shared logics and prevailing practices that can be distinguished from each other. Within media studies, the couplet of public and private spheres, often informed by Habermasian theory, is
quite familiar. In keeping with what we said above, we would underscore the importance of understanding emotional and affective dynamics in this regard. We would also highlight the interweaving of the two: Berlant (2008; 2011), writing in the American context, argues cogently for what she calls ‘intimate public spheres’. These are manifested in affective structures within society, embedded in, for example, mediated storytelling. Such narratives can reproduce ideologies related to contemporary capitalism, with dominant aesthetic forms registering and articulating class, race, and gender inequalities, as hegemonically normative.

Our focus is on the political sphere, though we emphasize that it is inexorably shaped by such elements as aesthetics, affect, and intimacy. The political public sphere concerns collective contestations, and these may be of the organized form that we associate with politics generally, or of the more fundamental kind of contestation that can arise anywhere on the social field. This latter version invokes the Mouffian notion of ‘the political’ referred to earlier. In terms of specifying spheres of media engagement, we focus on politics and popular culture as key staging grounds for actors involved within these spheres, for example citizen groups, journalists, or policy makers within political spheres, and audiences and fans, producers and performers, within popular culture.

Media engagement in the political sphere is tied to the visions and requirements of a viable democracy and its need for civic participation. On a general level, this civic engagement is conceptualized as predicated on a sense of agency empowered to act meaningfully in political contexts. This civic identity in turn has been seen as dependent on supportive ‘civic cultures’ that can facilitate engagement and participation (Dahlgren, 2013) and the structural relations of power that shape them.

At the same time there are good reasons for not engaging in politics, as many authors have noted (for example, Hay, 2007), while with populism heightened affect is at risk of turning engagement into enragement and eroding key features of liberal democracy (Müller, 2016; Eatwell and Goodwin, 2018, Urninati 2019). Among the dimensions of civic culture are communicative spaces that are accessible to citizens, and in today’s world these spaces are often comprised of electronic media. These spaces, however, have become increasingly uncivil, and especially in the wake of extremist right-wing media practices even at times dangerous for the life of
We note also that in recent decades researchers are finding that the modes of political engagement are changing, as citizens find new ways to the political, ways that are often more personally meaningful and more focused than older (party) ideological mobilizations. Not least with the internet revolution, the rise of social media has altered the character and practices of engagement, allowing for more variety and individual- and group-definitional initiatives. Bennett and Sederberg (2013), for example, distinguish on the one hand between traditional collective action, which is characterized by formal organization and control, as well as the engendering of a collective identity, and on the other hand the newer, connective forms of engagement. Connective action, emergent in the internet age, is typified by digital linkages that afford fluid and weak networked relations and extensive self-organization (see also Anderson, et al 2018; Gerbaudo, 2019; Baym, 2015). Nevertheless, social media as a platform for democratic politics are not without serious problems, as many have argued (Bartlett, 2018; van Dijck, J., 2013; Phillips and Milner, 2017; Nagle, 2017, amongst others).

Engagement in the political sphere is dominated by contestation over concrete issues, but it is also about ideologies, identities, brands, and, at bottom, power. Engagement flows via traditional mainstream media, especially journalism, but also by many genres of content on the internet, not least on the terrain of social media. Not only is access to the political sphere rendered easier, but the capacity for people to generate cultural content – not least of political relevance – is immensely augmented. It is here where we witness newer forms of political expression and practice emerging, with citizens defining newer pathways to the political. The main focus of engagement remains contestation over resources, but this has been strongly complemented in recent decades by engagement in values, moral issues, identities, and life-style disputes.

Traditionally, politics and popular culture were perceived as quite separate spheres. Politics was the domain of rational thought, knowledge, and deliberation (with a decided masculine edge), while culture was seen as an arena of aesthetics, emotions (i.e. feminine), where satisfaction, play and pleasure were paramount. This sharp
distinction has given way in recent years, as scholars have shown that they cannot always be so clearly separated (see, for example, Hermes, 2005; van Zoonen, 2005). It has been underscored that politics and (especially popular) culture in the media are often discursively constructed in similar ways; they inform and feed off each other. Both mobilize rational as well as affective response, and manifest the blurring and hybridization of media genres. Popular culture offers access to symbolic communities and invites us to engage in personally important questions about how we should live (and live together), and what kind of society we want. It can help us process conflicting values, norms, and identities. This can readily open doors to political engagement.

The intersections across the political and cultural spheres can be a cause of concern precisely because of emotional connections to brands or other symbols. In the case of populism, political engagement is mobilized around perceived grievances that in fact often do have a degree of legitimacy, in that they are triggered by long-term failures of liberal democracy to universally fulfil its promises (Canovan, 1981). Emotionality is mobilized and galvanized, though the response and proposed solutions take on an illiberal, anti-democratic character. Core brands – or, more generally, symbols – evoke strong affective response, both positive and negative. Thus, for example, ‘the people’ of ‘the nation’ stand against ‘the elites’, ‘immigration’, and ‘multiculturalism’ (Alvares and Dahlgren, 2016; Mudde and Kaltwasser, 2017; Wodak, 2015).

The focus for our meaning of engagement concerns itself with problematizing power relations and hegemonies – often building on currents within cultural theory, critical political economy and critical neoliberalism which emphasise process and context as essential to empirical and theoretical modes of analysis (see Peck, 2010; Dawes and Lenormand, 2020). Media engagement can never be seen as an exclusively rational/cognitive phenomenon. An emotional investment often serves to launch and sustain people’s involvement, i.e. their engagement. Within the spheres of politics and popular cultural spheres, reason and the cognitive work of engagement connect with and are sometimes entangled within affect and the emotional work of engagement, often providing the energising force for actors who shape the circumstances for, and affective and material infrastructures of, media engagement.
A Spectrum of Media Engagement

We argue that media engagement is best understood as a spectrum of phenomena that is protean. Our notion of engagement links the personal, the socio-cultural, and the political, and these elements serve as a horizon in parameters of media engagement. This spectrum addresses the cognitive and affective modes of engagement of citizens and publics, audiences and users, highlighting the different positions and intensities of engagement in various contexts. Thus, we see engagement as having a spectral character, which includes affective and cognitive modes, switching between positive and negative engagement, to disengagement. Positive engagement typically might include emotional identification with a politician, or a character in a television drama series for example, inviting sympathy and empathy, voting for the underdog, sending encouraging tweets. Negative engagement might involve emotional dis-identification with a politician, or a character in a television drama, closing down sympathy, trash-talking on Twitter. These affective modes often work in tandem, and professionals and performers are fully aware of how to craft both positive and negative emotions even in the same character, thus inviting intense feelings from audiences and publics, fans, consumers and users who emotionally invest in a political campaign, or storytelling in popular culture (see Hill, 2018; 2017, for further discussion of the spectrum of engagement).

Disengagement as such is often under-researched. On a common sense level we can see disengagement as flowing from the same logics as engagement, but in reverse. For example, citizens may avoid following certain debates and political campaigns because these are too intensive, too emotionally upsetting. Or, as research has found, such political discourses may evoke feelings of powerlessness or frustration. In culture, we may speculate on possible grounds for media disengagement, from boredom to outrage, from a sense of having ‘moved on’ in one’s development to a feeling that the cultural artefact in question has now attained narrative resolution and feels ‘completed’. Yet analytically more could be derived from disengagement; research can take the form of an assessment of performative failure – for example, why did citizens not vote for a particular party, or why did viewers ignore a series, or switch off half way through? But there is little sustained research on how this happens and why it is a routine feature of our media experience.
Work by Karppi in *Disconnect* (2018) on the affective bonds of Facebook and fear of disengagement is one example of emerging work in this area; or Syvertsen (2020) on the politics of disconnection from pervasive and invasive media. Another is that of Keinonen et al (2018: 74) who consider reality talent shows in several European countries, noting that media industries have tended to ‘ignore the reasons and ways in which audiences resist engagement.’ Disengagement is a means of interpreting how citizens and audiences distance themselves from politics and popular culture on a regular basis, sometimes due to the simple fact that there isn’t enough time in the day and they need to make room for other content and experiences, but also due to disaffection and even anger with an ideology, a political party, or an entertainment brand.

A meaning of engagement as a spectrum of phenomena illuminates the myriad ways people engage and disengage with the media, and how this differs from person to person, or group to group, across varying political and popular cultural spheres. This enables us to understand the value and meaning of engagement as something played out in the contexts of political and cultural institutions, media and creative industries.

**Analyzing Media Engagement: Five Parameters**

From this overarching discussion on our definition of media engagement we now turn to developing a toolbox that can help orient its empirical investigation. Our notion of engagement as a nexus informs the specific parameters of media engagement that we offer below. Each parameter seeks to highlight a definitive attribute about media engagement, offering an angle of approach, yet we assume that the parameters work in conjunction with each other. At the same time, in any specific instance of media engagement, some parameters will probably have greater relevance than others and relate to each other in differing configurations. Our parameters are: media contexts, motivations, modalities, forms, intensities and consequences.
I. Media contexts

Here we have in mind the specific entry points that frame media engagement, as well as key features such as attention factors, pre-existing knowledge, skills and practices in regard to relevant genres, platforms and their logics. The significance of distribution and the global flow of content are important to the contexts of engagement. This includes formal media economies and recognised distribution pathways, such as public service media, official websites for news, or Netflix access in a particular region. This also includes informal media economies and piracy pathways, such as VPNs, friendly sharing of clouds and passwords, and websites such as Encodi with the latest films and TV shows on offer without windowing or regional barriers (see Lobato and Thomas, 2015).

The place and time of media engagement is significant. There is the location of a media production, such as a studio or outside event for television news, or the private home of an internet celebrity and their daily vlogs. The place in which we engage with content is also significant, including the physical place of our home, or our seat on the train from work, and also the region we live in and our access and social context to engagement. Such attention to the contexts of media engagement allow for transnational media and audiences, where local, regional and global contexts impact on the ways people engage and disengage with media in the spheres of politics and popular culture. Media contexts thus include features at both the sites of production and reception in local, national and transnational settings; today’s complex and ever-evolving media landscape, not least in the online world, requires careful attention to understand how specific contexts impact on engagement. The time of media engagement matters, whether engagement is occurring with live news coverage, or a current social protest, or through catchup services and archival content on streaming platforms. The context of time connects with intensities in the parameters of media engagement.

Finally, we must also take into account what might be termed ‘meta-contexts’ – structural contingencies that make possible as well as delimit media engagement. On a highly meta-level, we highlight in the political sphere the emergence of what is sometimes called ‘post-truth’ (which was the Oxford English Dictionary named the word of the year in 2016). Strongly associated with the recent rise of radical right-
wing politics in Western democracies, this term signals how emotional appeals are becoming more influential than objective facts in forming public opinion. This is a growing trend, not the total reality, of course, but nonetheless points to an important attribute of what goes on in public spheres. It signals an emerging new epistemic regime, where emotional response prevails over factual evidence and reasoned analysis (Dahlgren, 2018). Accuracy and transparency give way to algorithmic analyses of what appeals to people’s affect.

This is clearly a ‘dark side’ of affect: what is significant here is not just the growing disregard for traditional sources of knowledge, such as science and journalism, but also the role of emotionality in constructing and engaging with the political world. Truth becomes reconfigured as an inner subjective reality, an affective leap; the emotionally attractive becomes the foundation for validity claims about reality. Affect can lead people to find short-cuts to deal with the massive amounts of information that confront them; the role of the cognitive in political engagement becomes further reduced. Moreover, the gravitational pull of group identity reduces societal insecurity and promotes emotionality. Yet in the long run this becomes debilitating for the individual, it fosters cognitive closure of groups, and ultimately damages the critical role of public spheres.

From another angle we would theorize about society-wide hegemonic discourses, prevailing political climates, or economic constrictions. In our view the most compelling analytic frame is the critique of neoliberalism, i.e. the fundamentalist view that places market forces and commercial logic in the driver’s seat of societal development, side-lining democratic accountability and concerns for the common good. Emerging ideationally between the world wars, becoming fully embodied in policies in the West during the 1980s, it today also reaches not just globally but also into the micro-meshes of everyday life (see Peck, 2010; Harvey, 2007, for insightful histories). The marketization of most values and practices has profound bearing on all facets of the social world, from democracy (Brown, 2015), and cultural policy (McGuigan, 2016) to not least the media themselves (Phelan, 2014). Neoliberalism, as the contemporary historical phase of capitalism, is processual – like media engagement itself (Dawes and Lenormand, 2020). Thus, elucidating the lines of impact of this meta-context requires detailed analysis, and involves critical reflection.
on (often less visible) power relations; the notion of ‘the political’ remains ever potentially relevant.

2. Motivations

This refers to the intentionality behind the engagement. All human action has some sort of intentionality behind it, even if this resides at an unconscious level. The subjective predispositions behind and/or evoked by engagement offer another significant parameter of analysis. It need not be psychologistic or reductionist in its approach, but can rather search for patterns of motivations and perceptions that are socially situated and specific to various categories of actors. Unravelling them from each other and tracking down their social origins may at times be a challenge, but the effort can tell us important things about the contingencies of engagement.

An analysis on the motivations behind media engagement takes into account interest, from basic curiosity to a drive for knowledge that draws upon reason and rationality (Dahlgren, 2013). For example, the motivations for engaging with a documentary about memory and genocide may arise from an interest in human rights, and a drive for better understanding of trauma, or information on amnesty. The motivations to engage with such a documentary shape the modes of engagement for such a genre, both in terms of the crafting of engagement by the filmmakers and how audiences actually engage with documentary (Hill et al., 2019). Other motivations behind engagement can take into account pleasure, such as relaxation, escapism, romance, or eroticism, which draws upon affect and emotionality. For example, the motivations for engaging with crime drama may arise from an interest in the genre, a particular writer or performer, and a love of solving the puzzle of crime, thus connecting the genre and storytelling with a prior knowledge of and interest in this kind of drama experience (Turnbull, 2014).

Another motivation relates to socialities that tell us something about the ways we are members of various communities, groups, and networks. This can connect the reasons for engaging with factuality or fictionality in television content, for example, with peer recommendations, or a sense of belonging in fan communities. Two further motivations include efficacy, relating to a confidence in one’s ability and a
sense that engagement can be successfully enacted. For example, in relation to political comedy, research suggests audiences need to feel confident in their ability to understand real world politics in order to get the humour, interlinking the motivation to engage with a pre-requisite of news and genre knowledge for satire (see Doona, 2018).

There is also the issue of duty where motivation has to do with a sense of obligation or solidarity, some kind of social value that resides beyond the self. For example with regard to news, citizens feel a duty to engage with real world events, but at the same time may feel a lack of efficacy in judging what news they can trust to present facts in ways they can understand. Thus, empirically we would try to illuminate how constraints and opportunities impact on each of these subjective grounds of engagement. Certainly, elucidating the motivations of citizens and audiences will enable an understanding of where engagement is coming from (industry, genre, narrative, settings, for example) and where it may have an impact on our lived realities (politics, society, communities of viewers, for example).

3. Modalities

This points to the communicative character of that on which the engagement builds. One can foresee an extensive inventory of modalities but for starters it can be useful to make a simplistic duality of what is in fact a complex amalgam: referring to the discussion above, we can consider affective and cognitive modes of engagement. An affective mode of engagement builds upon the affective structures within a genre, particular narrative, or a live event, where through the crafting of engagement we are invited to engage with subjective and emotional issues, personae and characters, or moral dilemmas. Thus, the mood of a live experience will impact on the affective mode of engagement of the crowd; for a memorial the crowd may feel sad and be moved to tears, for a political rally the crowd may feel outrage and be moved by anger. Affective engagement is used to great effect in storytelling, inviting a range of emotions, from love, to hate, to indifference, with characters and settings.

Cognitive engagement is a mode that invites more critical thinking, perhaps drawing on the knowledge of citizens to cognitively engage with a political issue, or to ask
tough questions of a politician and their claims with regard to the environment, say, or public education. Thus, a cognitive mode of engagement can be crafted by producers to invite citizens and audiences to think through the media about a variety of social, political, and moral issues, or to understand more about a particular problem, reflect on the implications of the problem, and to potentially do something about it. Affective and cognitive modes of engagement are often intertwined, increasingly so with the use of artificial intelligence in digital media. They work together in people’s experiences of media, at times with a clear invitation to engage with the head and/or the heart, at other times in ambiguous ways that mix these modes of engagement, generating a challenging, or ambivalent, media experience.

Modality is often related to form, such as genres, style and themes, visual and sound engagement, or physical and sensory engagement. Ways of engaging with fictional genres, like comedy or melodrama will shape our overall experience, drawing on genre knowledge about characters and storylines, relying on skills with regard to character identification; for example, typical narrative tropes, or transmedia storyworlds (Evans, 2019). Engaging with news, or documentary, relies on a different set of skills and genre knowledge, including referential integrity, assessing truth claims, and assessing factual evidence. Genre, then, is a key mode of engagement for much media content. We only have to look at mixed genres to understand how vital this is to shifting modalities of engagement; what is fake news and how ought we to affectively and cognitively engage with it?

For certain texts and artefacts sound engagement will be vital, such as Autonomous Sensory Meridian Response (ASMR) YouTube videos where soft sounds like whispering or tapping invite sensory modes of engagement. Other texts and artefacts draw on the primacy of the visual, asking us to read visual representations, such as the use of colour and national flags in a political campaign. We ought to be alert to the mixing of sound and visual engagement in the affective structures of content and the cognitive skills we apply to reading the visual and listening to sound. The way content moves us also includes our physical reactions, and a vital modality of engagement is that of the physical body, including the physicality of performances, the tactile ways stories are told, and the physical responses of people when engaging
with the media (see Hill, 2018 for further research on audience engagement and genre).

Thus, we have genre-based modalities of engagement, including varying styles in fiction and factuality, with a multitude of themes, and we also have multi-medial, visual, aural, textual variants within and across these forms. The truly interesting cases will of course be those that use mixed forms and mixed modes of engagement, and will require further empirical and theoretic development. The cognitive and affective dimensions that are embedded in text, or text plus sound, or text plus other visuals, plus sound and movement, and so on, may not be easily ascertained, but even if we may not fully disentangle the various modes of media engagement, our efforts can nonetheless be illuminating. Indeed, being attuned to mixed modes of engagement is perhaps one of the biggest challenges in researching media experiences and raises issues about multi-site and multi-methods for media and cultural studies.

4. Intensities

How long the particular experience of engagement is sustained is of considerable significance, yet this aspect is often ignored. Intensities of engagement leads us to consider what John Corner calls stages (2011; 2017) of engagement, modelled with a continuum, subjective dimensions and time scales. This comprises both subjective elements of experience, as well as observable factors of usage and involvement. Stages can be conceived in terms of short form engagement, the kind of fleeting engagement that can happen for bite-sized content, paratexts and ephemeral media. For example, short, intense periods of binge watching crime drama can happen during a moment in one’s life, perhaps during the break-up of a relationship, illness and rehabilitation, and then it can be over. We can characterise this as an intense engagement with a genre and cultural artefact, an energising force in everyday life that can become part of the life histories of an individual or collective group of fans.

There are also more sustained ways of engaging with media, where there are deeper connections that involve embedding particular media experiences into the spaces and places of regular routines, family rituals and cultural memories. This kind of intense
engagement can occur over a longer period of time, an embedded engagement in the life course of an individual or collective group (Hill, 2018). For example, football supporters can remain loyal in their engagement with a team over the course of their lifetime; this is an embedded engagement that becomes part of the identity and everyday practices of an individual or collective group of supporters for a long duration, sometimes passed on within families to future generations. Indeed our time bonds with media are vital to engagement, impacting on the duration and affective dimensions of engagement.

Some of the most intense experiences we have with media are in the past, embedded in our memory and linked to what Keightley and Pickering (2012) call the mnemonic imagination. For example, the fact that the comedy series *Friends* is the most watched series on Netflix tells us something about the significance of archival content on streaming services, the time we give for watching this comedy in our daily lives, and the time period of the comedy in the 1990s, tapping into trends in nostalgia, and the bond we form with the show, curled up on the sofa for a date with the convivial world of *Friends*. In other cases, the intensity of our engagement with media as connected to memory cultures is a site of contestation. For example, the creative production of drama documentaries can offer a performance of remembering that challenges official state-sanctioned histories, or calls for social justice and greater transparency in the criminal justice system, such as the *Chernobyl* (2019) series on HBO and related podcast, or *When They See Us* (2019) and the related Oprah Winfrey televised special on Netflix. We can see how intensities of engagement are strongly connected to temporal relations with media and memory cultures.

5. Consequences

This points to the upshot and implications of the particular instance of engagement. Clearly, consequences can be specific to relevant groups, e.g. engaged citizens, TV series viewers, media industry actors, etc. But further, consequences may or may not relate to possible pre-existing goals of engagement. Also, analyses must take into account the dimension of explicit agency manifested on the part of those who have become engaged. The consequences of engagement can take many forms – from a sense of empowerment, to the experience of pleasure, to the attainment of
satisfactory audience statistics for media organizations. We are aware that the consequences to engagement are not necessarily positive.

As Corner (2017: 5) notes, ‘dis-engagement has been seen for some time as a prevalent social problem…and there are many forms of engagement with the media of which we can say with confidence that no engagement would have been far better and the web is increasing the number of possible examples here.’ There are urgent reasons in the current media landscape for analysing both positive and negative engagement, and what we perceive as the intentional and unintentional consequences of political and cultural engagement.

**The Case of Populism and Professional Wrestling**

In this final section, we offer a brief analysis of populism in professional wrestling in order to address the five parameters of media engagement across political and cultural spheres. We consider how professional wrestlers shape the affective structure of a live match through a spectrum of engagement that invites their audiences and fans to passionately engage in positive and negative ways with contemporary political culture and the rise of populism in Europe. Here, the sense of engagement as a nexus of relations is vital to understanding the connections between the political context of populism and the cultural context of professional wrestling; we will see how certain weight can be given to particular parameters of engagement, with strong ties for context, modalities and intensities of engagement that shape the motivations and consequences of engagement. This has implications for how we analyse this case as a means of seeing the energising internal force of engagement in the moment of a live media event, a raw and powerful modality in popular culture that is a counterweight to real world political participation and the contexts of neoliberalism.

**Populist Tensions**

‘Populism’ is a complex and contested concept, and it is sometimes used more in a pejorative rather than analytic manner. Though a difficult signifier to stabilize, it is
unavoidable in today’s political world. In principle, populism can be politically on the left or the right, but in today’s Europe, it is largely right-wing populism that is robustly on the march, often with an extremist profile. (Our view in general aligns itself with the work of such authors as Mudde and Kaltwasser, 2017; Müller, 2016; Urninati, 2019. In particular we find Canovan’s [1981] emphasis on the notion of ‘the people’ to be a useful anchoring.)

Canovan (1981) reminds us of a built-in force-field at the core of liberal democracy, two strands that are basically incompatible with each other yet also mutually entangled, complementing each other in convoluted ways. In simplified terms, on the one side there is an agenda that insists on popular sovereignty, ‘power to the people’ and government by, for and of the people. Confronting that is the other strand, that of liberal constitutionalism. Traditionally it has sought, via complicated institutions, laws, and practices, to maintain safeguards, checks and balances in the democratic system. At the same time it has served to maintain power elites and to modify the direct political impact of ‘the people’ through various mechanisms of exclusion. These practices inevitably foster social resentment, which can – and at times does – turn political.

Populists fail to appreciate the necessity for constitutional limits on direct democracy. At the same time they often (and with justification) react against seemingly impenetrable and unresponsive institutions and entrenched hierarchy. The constitutionalists, on the other hand, often fail to reflect on where the grounds of their authority ultimately derive from – i.e. ‘the people’, or more accurately, segments of it – are often dismissed precisely as ‘populist’.

Much of this is being played out in the current neoliberal context, and the rise of populism must be seen in part as a response to liberal democracy’s failure to deliver on its societal vision. Thus, populists will claim that they represent ‘the people’ – appealing often to a sense of collective identity perceived to be under threat – while in fact they usually only have the support of a fraction. Moreover, they veer towards authoritarianism, and generally reject pluralism, often in xenophobic and racist terms – thereby excluding many from their notion of ‘the people’. Constitutionalists – usually embodied in the political, economic, and legal elites, and mainstream media – claim the prevailing order is the best arrangement for ‘the people’. Yet at the same
time this order is also serving to deepen social divisions and deprivations. We need to keep this tension in mind, and avoid reductionist views such as ‘liberal’ (good) vs ‘populist’ (bad).

**Carnevalese Wrestling**

As Castleberry et al (2018) note, professional wrestling can invert real world issues, using the carnivalesque to process the political in athletic performances. The research in this section explores wrestling and European politics, drawing on qualitative semi-structured interviews with professional wrestlers, videos of matches, and participant observations of live matches. In particular, the example of Marcus Shilling’s performance as Marcus of Man, with a Brexit storyline, exemplifies the spectrum of engagement where an explicitly political storyline is used to deliberately invite intense negative engagement from the live audience towards a right wing political persona.

Shilling is a British citizen who has made his home in Sweden. He joined Stockholm Wrestling (STHLM) and, working with the company, created a ‘stereotypical English character, arrogant with no redeemable qualities’ (Shilling, 2018a). Marcus of Man is a persona based on his homeland of the Isle of Man and channelling the conventional traits of an upper class politician: elitist, egotistical, right wing, pro-royalty and power hungry. He is also very vain about his hair, a sign of his strength and weakness, referencing both classical mythology (think of Samson whose great physical strength was connected to his long hair) and celebrity politicians (think of the American President Donald Trump or British Prime Minister Boris Johnson and their distinctive hairstyles). The contest and motivations of engagement mix the professional wrestling industry and its commercial considerations with the character development of Marcus of Man, a villain who allows this professional wrestler to perform the part of a heel.

The context, and indeed meta-context, of engagement provides the real world backdrop to the character, and its broader storyline, thus shaping the modes of engagement from the live crowds. In terms of the meta-context of neoliberalism and European politics, Shilling and other professional wrestlers used the backdrop of rhetoric regarding free movement for migrants to shape the storytelling. The specific
political context of the referendum in which Britain voted to leave the European Union became a rich narrative vein for his character: ‘when Brexit happened I thought I could run with that all the way’ (Shilling, 2018a). As a former Celtic community and Viking stronghold, the Isle of Man is a self-governing crown dependency, similar to the island of Jersey. Although not part of the EU or the United Kingdom, its inhabitants are British citizens with limited rights. They – as a particular category of ‘the people’ – could not vote in the referendum and yet have been caught up in the outcome. Shilling incorporated the Brexit campaign into his performance: ‘I get the crowd to chant Brexit! Brexit! I have a chair with ‘Hard Brexit’ written on it. I have this move called Breakneck Brexit’ (Shilling, 2018a). In such a way, Shilling channels his own feelings of political disempowerment, using his lack of voice in one political setting as a narrative strategy for recognising power inequality and social injustice in a more overtly theatrical setting. For the audience, this interfaces with their motivations – these have obviously to do with pleasure, but also their political dispositions and even possible anger at the political contexts of Brexit and the rise of populism in Europe.

The live context and the theatrical space of the wrestling ring are vital. The live experience ensures a visceral and intense engagement from the crowd, one where physicality and spectacle are part of the event. The modality of affect is clearly overwhelming. Yet this also connects with politics and the news, where what is happening in British and Swedish politics is incorporated into the live performances. Shilling plays this heel in tandem with other wrestlers who also perform characters in the fictional populist party ‘Partiet’. With their menacing moves, dark blue arm bands (a conscious colour choice), and grab for power, their political drama parodies the right-wing Swedish Democrats who have been gaining votes and power in Sweden over the past few years. In the recent general election in the autumn of 2018, there was a deadlock in the number of votes, which has resulted in an uncertain future, with various factions refusing to work together, or join forces against this extreme right-wing party. STHLM Wrestling staged a live event around the time of the election with Partiet as a running element of the storyline during the evening.

Clearly the parallel contexts of the spectacle of the political in the ring, and the Brexit referendum, or the general election in Sweden, taking place at a similar moment in
time operate as a stark contrast, creating a form of cultural engagement that is different from the political reality of its live audience. The persona of Marcus of Man is explicitly political, and his fans love to hate him. Shilling spends time on the details of his character – his physical appearance, the way he enters the ring and speaks to the crowd, etc. – in order to build up negative emotional engagement. Here we see the modalities and forms of engagement are vital to this political storyline in professional wrestling. He wants his fans to feel outraged at the abuse of power. He achieves this outcome with verbal cues and physical props: ‘I refuse to speak Swedish. When I come out I look very arrogant, looking down at people, literally I look down my nose’ (Shilling, 2018c). The theatrical elements of his engagement profile are centre stage: ‘One time I sang my national anthem from the Isle of Man, I just took the microphone and started singing the anthem out of tune and it got a wonderful cacophony of boos from the audience’ (Shilling, 2018c). Note how the performance, singing, acting, and physicality, mix together in this characterisation of Marcus of Man. Such performance styles invite mixed modes of engagement, where affective engagement and an intensity of passionate energy shape the live experience. The basic form of the event – professional wrestling, with its (often comic and satirical) dramaturgy and caricatured roles of the antagonists – prefigures much of the engagement, while Marcus of Man and his audience add the particular political dimensions that distinguish his and the audience’s performance and add to the overall intensity of the live experience.

The Breakneck Brexit storyline includes an understanding of the parameters of engagement where the context of politics and popular culture shape the modes and intensities of audience engagement:

I know the crowd at the live matches in Stockholm are intelligent, liberal, in the mid-20s and 30s. It works well with them, they want to be in on the joke, they have more hate in them since Brexit. I push their buttons, play on fears of losing their Swedish identity, being influenced by Britain or America (Shilling 2018c).

Shilling knows how to generate such negative engagement from the crowd as fuel for his character and other wrestlers in the ring. It is clear to Shilling that his performance is part of a ‘visual representation of political culture’ (2018c). He
explains: ‘If I am holding someone down or choking someone it can be a metaphor for choking out smaller countries or disempowering people, it can be a visual representation of political reality’ (Shilling, 2018c).

With a character such as Marcus of Man, and the Partiet political storyline, nationalism and xenophobia are used to trigger intense negative engagement with populism. His persona channels the exaggerated rhetoric of right-wing politicians. He makes unfounded claims, spouts untruths about the benefits of breaking with the European Union, and effects a politics of blame on migrants, or socialism, for the decline of Great Britain. His representation of populism embraces the more absurd or surreal elements of political culture. Marcus of Man is a ridiculous character. His ego and arrogance crowd the ring, taking all the performance space, grabbing the microphone from the MC to shout the loudest and making a show of forcing his political opinions to be heard. By using the symbolic power of political comedy, Shilling presents his character as an object for ridicule. Marcus of Man is a despicable persona, whose performance demonstrates that populist rhetoric and right-wing politicians ought to be exposed and liberal democratic values defended in the current charged environment. In this, the parallel between the UK and Sweden is made visible in the form of a British-identified political persona in the fictional Partiet as a warning of what can happen when populism is given power and voice in democratic processes. Shilling’s performance of Breakneck Brexit exploits and critiques the way the referendum to remain or leave the European Union has led to political mess and a crisis in British politics and society with long-term repercussions. What is also made visible is that Swedish socialism faces a similar threat from extreme right-wing groups who at present are denied recognition in national governance. As played out in the wrestlers’ arena, the Partiet storyline shows how right-wing personas can be overcome, a visual representation of the choking out of populism, with the stark reminder that this is not the case in political reality.

Thus we see the various consequences of engagement for this case. There is of course the explicit consequences for returning fans and audiences, where the long-running political storyline of Marcus of Man and Partiet is a soap opera which has cliff-hangers that draw crowds back for more, thus ensuring engagement over a period of time and one which has commercial impact for the event company and the
professionals in the ring. There is no explicit outcome of political engagement; this is a theatrical spectacle after all. However there are implicit consequences that suggest broader social issues and spaces for reflection on political culture. Former wrestler and event manager Dan Ahtola notes: ‘politics is moving closer to wrestling’ in its spectacle of excess, the focus on emotions and the way politicians play assigned roles in seemingly intractable conflicts (2018). In such a political environment, the affective climate of live professional wrestling offers a space for political expression: ‘you are venting all the disappointment and anger. Everyone is frustrated, everyone is stressed, everyone is disappointed’ (Ahtola, 2018). As Ahtola notes, with a clear engagement profile ‘everyone knows what to do, you can express strong emotions that you are not allowed to do in everyday life. You don’t have to think, you know what to do’ (2018). Whilst modern-day politics is messy and full of conflicting emotions and opinions, the power of professional wrestling is that its theatricality and physicality work in ways that (at least potentially) serve to channel negative emotions and transform them into positive experiences. According to Ahtola, anger is not a form of expression that is encouraged in Swedish social life: ‘Where can you go and scream in anger? You focus anger in this direction. It is better to be angry than miserable, miserable stays inside you, anger you vent. I think you can act, as an audience you play a part and get into character. When you express yourself you show who you are’ (2018). In this case, liberal democracy triumphs: ‘The difference is that in wrestling the bad guy is always beaten. You create a conflict and then actually solve it. You win because you are in the right. This is something we do not see in politics’ (Ahtola, 2018).

**Conclusion**

Our argument about the parameters of media engagement draws upon various scholarly research within political and social theory, media and cultural studies, which sees engagement ‘within a larger range of psychological orientations to the world and to the artefacts within it’ (Corner, 2017: 4). Media industry discourses of engagement fix engagement in time and space in the form of metrics or social media analytics, perhaps the most common means for capturing engagement behaviours. But, such a reductive meaning of the term misses the power of engagement as an energising
internal force. We argue for a definition of engagement that takes into account affective experience and sees engagement as a resource for living (Corner, 2017: 5).

The five parameters of engagement mapped in this article are a means to highlight engagement as a nexus of relations, offering empirical ports of entry for researching concrete manifestations of the phenomenon. The fact that the relative salience of each parameter is likely to vary from case to case also alerts us to the importance of being sensitive to context and contingencies in our analyses. Researching media engagement may well involve keeping several balls in the air at the same time, but such arduous conceptual and empirical juggling has the potential to elucidate it in ever new and significant ways. We suggest that to be engaged with the media means more than being taken up with, diverted by, or reactive to a cultural artefact or event. Engaging with the media, in the context of politics, society and culture is a significant psychological investment in something or someone that matters in that moment and/or over a longer period of time. This is why engagement matters; it tells us about the connections across reason and rationality, affect and emotion, and why people connect or disconnect with politics and popular culture.

**References**


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Abstract
Virtual reality proponents often promise the technology will allow a more fully embodied sense of presence at a distance, or what researchers have called ‘telepresence.’ Departing from telepresence’s original focus on providing access to dangerous environments, VR and robotics researchers in Japan now promote everyday service and factory work via telerobots as a solution to the country’s rapidly shrinking workforce. Telepresence becomes a way to access the physical labor of the elderly, persons with disabilities, and foreign workers, while at the same time keeping them fixed in place at home or behind closed borders. This essay theorizes the perceptual segregation imposed by these immersive labor platforms as a form of telepresence enclosure: the mediated privatization of presence itself. If VR continues on its current trajectory, the telepresence enclosure is poised to enable technologically advanced countries to extract the physical labor of marginalized populations at home and abroad, while at the same time ensuring these workers remain excluded from a more fully embodied social mobility.

Keywords
telepresence, telexistence, virtual reality, remote work, robots, disability, Japan
Introduction

As virtual reality (VR) becomes a medium for remote work, it introduces unprecedented possibilities for the control and monitoring of a worker’s perceptual environment. VR is gradually emerging as a viable platform for embodied telework and an increasingly plausible substitute for physical commutes. The technology is poised to become a platform for virtual labor and transit, even as it continues to be advertised primarily as a personal media device. This is clear if you listen to Facebook CEO Mark Zuckerberg speak about why Facebook decided to purchase the Oculus virtual reality startup for 3 billion US dollars in 2014. Explaining Facebook’s interest in VR to technology journalist Kara Swisher, he notes:

I think one of the biggest issues economically today is that opportunity isn’t evenly distributed […] If you have a technology like VR where you can be present anywhere but live where you choose to, then I think that can be really profound […] Historically cities have grown to be bigger by building better physical infrastructure. There’ll be some amount of that […] but I have to believe that, we’re here in 2018, it’s much cheaper and easier to move bits around than it is atoms. It strikes me that something like VR or AR, or even video conferencing on the path to that, has to be a more likely part of the solution (Swisher, 2018).

VR proponents and commentators have long pointed to a reduction in the need for physical travel as a key social benefit potentially offered by the technology. As Japanese internet researcher Aizu Izumi (1990: 43) speculated early on during the first era of VR hype, ‘The twentieth century allowed people to physically move freely, but the twenty-first century might come to be an era where people can have their will move freely while they are physically in one place.’ American VR proponents like Jaron Lanier and Brenda Laurel similarly promised VR would help minimize pollution by having people work from home rather than commute (Chesher, 1994; Laurel, 1993). But VR demands physical enclosure in exchange for perceptual mobility. As Oliver Grau (2003: 346) notes in his early study of VR immersion, the flipside of virtual mobility is being locked in place by the medium itself: ‘the individual communicator, who wanders far and wide through the digital networks,
would then find him- or herself fixed inside a *static vehicle*, which is the means for physical bodies to change into optical ones’ (emphasis in original).

Facebook’s grander vision for VR clearly includes not just enabling the company to market their own hardware (easing their current dependency on other companies’ devices), but also to own the next platform through which users become ‘present’ to one another socially. Zuckerberg sees VR not just as an evolution of the online social network, but as offering Facebook the chance to become the virtual landlord of digital transit, work, and recreational infrastructures that once would have centered around more direct forms of physical travel and movement. In other words, Zuckerberg is interested in VR not just as a new communications platform, but as a virtual substitute for basic physical infrastructure as well. While often downplayed in public-facing VR advertising, this ability to reshape the workforce stands to be the most socially significant aspect of virtual reality going forward. While the current push for networked employee tracking and surveillance has already transformed service and factory work today (Ajunwa et. al., 2017), VR telework goes even further, separating worker from workplace in order to monitor and regulate the physical and perceptual interface between them. Whoever controls the dominant VR platforms will have control over nothing less than when and how individuals move around and make themselves digitally ‘present’ to the world — and the data they produce when doing so.

As Zuckerberg’s comments hint, interest in VR as a highly immersive perceptual interface for remote work has historically been driven by economic incentives, even as its advocates operate under the banner of personal freedom and choice. What this ultimately points to is what I call the *telepresence enclosure*: telework platforms that seek to capture and mediate the entirety of a worker’s audiovisual perception while at the same time keeping the worker fixed in place and socially sequestered. VR transforms the ‘walled garden’ corporate platforms of the twenty-first century internet into a wrap-around 3D space. As this essay explores, VR telework also stands to spatially enclose a worker’s ‘presence’ in other ways, seeking to ensure their social participation remains within the platform and under the supervision of management. Following Mark Andrejevic’s (2007) approach to “digital enclosure” in the context of
ubiquitous computing surveillance, my invocation of enclosure here is meant to distantly echo the British enclosure movement, where public farmlands were fenced off and put under private ownership. Extending this surveillance trajectory to a more invasive biopolitical register, telepresence enclosure privatizes the perceptual space immediately surrounding the worker’s body, aiming for the privatization of presence itself.

**From Radioactivity to Rehabilitation: Telepresence Meets Telexistence**

Telepresence refers to the use of technology to make a person appear present somewhere other than they are physically, including the ability to interact with objects in this remote environment. Like the telegraph, telephone, and television before it, telepresence promises to extend human perception across inhuman distances. The field of telepresence overlaps with robotics, which provides the physical shells telepresence operators remotely embody. Unlike VR approaches that locate the space of interaction entirely within a computer, VR-controlled telerobots seek to enable more immersive forms of mediated embodiment within existing physical environments.

While theorists in the US sometimes position telepresence and VR in opposition to one another (Goldberg, 2000: 5; Paulsen, 2017: 9), in Japan they are considered part of the same field. Telepresence research both predates and shapes the emergence of VR in Japan in the 1990s, making the country an important site for thinking through how VR came to be situated as a new platform for immersive telework. Today Japanese telepresence projects often focus on using telerobots to enable new forms of service and factory work, responding to the demographic challenges posed by the country’s rapidly aging and shrinking population. A Spring 2019 survey of small and medium-sized Japanese companies by the Japan and Tokyo Chambers of Commerce and Industry found a full 66% faced labor shortages, with over half expecting the situation to continue to worsen going forward. The most severe shortages were in hotels and restaurants, followed by caregiving and nursing positions (‘Two in Three of Japan’s Small and Medium-Size Companies’, 2019). Responding to shortages like
these, VR telepresence in Japan promises access to new populations of workers who may not otherwise be able to travel to work on-site.

While telepresence in Japan would come to focus on providing teleworkers to alleviate the labor shortage, this was far from the original context the technologies developed within. What would become known as telepresence research first began with projects funded by the US Military at the Argonne National Laboratories in Illinois in the late 1940s. The immediate need was to find ways human workers could safely but accurately manipulate radioactive materials, a new challenge born from the nuclear reactor research the same lab had performed as part of the Manhattan project. What at the time was called teleoperator research sought ways to open up a safe distance between a human operator and the radioactive materials they operated upon, while still allowing for the manipulative dexterity of direct physical contact. This resulted in a series of cable-based lever systems telerobotics historian Blake Hannaford describes as ‘essentially tongs that grew longer and longer’ (2001: 254).

The work of Raymond Goertz, an Argonne engineer working for the Atomic Energy Commission, was particularly influential. Goertz developed the concept of ‘degrees of freedom’ (DoF) to describe how many axes of movement a gestural tracking interface could utilize — a measurement still commonly used to describe virtual reality systems today. Goertz also made the fateful decision to cut the cables running from the teleoperator’s control booth to the remote operator arms, replacing this direct mechanical interface with a relay of electrical signals instead (see Parisi, 2018). By opening up this gap, teleoperation expanded from the more direct physical interfaces of mechanical engineering to become simultaneously a telecommunications medium as well.

Once the cables were cut, the distance between operator and operated-upon was limited only by the speed of electric signal transmission. Human gesture could effectively take place in two locations at once: initiated in one site, but with its effects registered in another space entirely. Much like how the telephone introduced the potential for nearly real-time bi-directional speech across long distances, teleoperator research aimed to extend other physical capacities: allowing hand and arm
movements to be immediately transposed to a remote location, while at the same time allowing teleoperators to perceive and feel what was happening on the other end of the line. Goertz’s innovations were followed by a wide range of manipulators with a gradual increase in dexterity, lightness, and strength, including an early three-fingered hand from the Japanese Ministry of Communications’ Electrotechnical Laboratory in the late seventies (Okada, 1979).

Not long after, the word telepresence emerged as a concept for describing what was being transported here: physically embodied agency at a distance (the original Latin praeentia, appropriately, means ‘being at hand’). Marvin Minsky, founder of the Artificial Intelligence Laboratory at MIT, first introduced the term in a June 1980 article in the popular science magazine OMNI. The article outlines a near-future scenario where light-weight jackets lined with sensors could be used to control a set of remote mechanical hands. ‘We could have a remote-controlled economy by the twenty-first century if we start planning now,’ he speculates.

Minsky’s article extrapolates a vision of how telepresence could allow humans to work remotely in dangerous environments like nuclear reactors, under the ocean, and in outer space. He distinguishes telepresence from earlier teleoperator systems by emphasizing ‘the importance of high-quality sensory feedback,’ where the instruments ‘will feel and work so much like our own hands that we won’t notice any significant difference’ (1980: 47). Teleoperator researchers from UCLA and the Naval Ocean Research Lab began using the term in their published reports by that fall (Corker et. al., 1980), and telepresence has since become the standard way to refer to teleoperator research in the US.

The period immediately following Minsky’s article is also when Japanese teleoperator research begin to develop into a field of its own, beyond the Electrotechnical Laboratory’s three-fingered hand. While Japanese researchers drew directly on developments in the United States, differences in the two countries’ approaches reflected the larger research environment of each nation. Military projects played a decisive role in the development of both teleoperator and virtual reality technologies in the US, from nuclear research to flight simulators, along with projects connected
to the NASA space program in the 1980s (Chesher, 1994; Grau, 2003: 172). Telepresence research in the US continues to be shaped by these military missions, with teleoperator-controlled drone strikes by the US military emerging as a particular focus of critical academic attention in recent years (Paulsen, 2017: 147-82; Parks and Kaplan, eds., 2017).

Japanese research agendas, in contrast, have long had their horizons shaped by the war-renouncing framework set down in article nine of the postwar Japanese constitution, itself composed by the American occupying forces, which limited Japan’s direct participation in military conflict. Adherence to this restriction has weakened in recent years, with the government gradually loosening guidelines on research with possible military applications. But in the eighties and nineties, this helped encourage telepresence engineers in Japan to focus on other rationales to guide and fund their research, such as using telepresence towards goals of physical and social rehabilitation. Much of the field in Japan can be traced back to Takemochi Ishii, a pioneering Japanese researcher in the field of human-computer interaction (HCI) in the 1960s (which at the time did not yet exist as a field in Japan). Ishii started his research career working in medicine, and only later shifted to computing. The most important Japanese telepresence researchers of the 1980s were in various ways Ishii’s heirs: Michitaka Hirose and Hirō Iwata had been his direct students, while Susumu Tachi similarly began his career with a focus on rehabilitation technologies (Aramata, 1996: 124).

Tachi’s career in particular came to merge a rehabilitation focus with telepresence technologies. He first became interested in human augmentation via technology after hearing Norbert Weiner’s *Cybernetics* read on Japanese radio and enrolling in the Mathematical Engineering program at Tokyo University in 1966 (Scoica, 2015: 61). His first project after receiving his PhD from the same institution was a robotic guide dog for the visually impaired, first proposed in 1975 and developed through the early 1980s. This led Tachi to a focus on human-machine systems for environmental navigation, including the need for ‘intelligent disobedience’ on the part of the robot dog: the ability to disregard the master’s commands when it
conflicted with what the dog’s own environmental sensor technology was registering (Scoica, 2015: 62).

With funding from the Japanese government, Tachi spent the 1979-1980 school year at MIT as a Senior Visiting Scientist, developing his guide dog project under the guidance of Robert W. Mann. Mann’s career trajectory was nearly a mirror image of Ishii’s. He started out as a rocket scientist focused on engineering new kinds of missiles, but changed directions in the mid-1960s to focus on using technology for augmenting human disabilities, leading him to develop the world’s first biomedical prosthetics. Mann’s lab was separate from the teleoperator research going on elsewhere in MIT’s Electrical Engineering and Computer Science department at the time, including Minsky’s telepresence work.

As Tachi recounts it, it was only after he returned to Tokyo that he was inspired to put the two research fields together under the rubric of what he would call tele-existence [tereiguisutansu], later contracted in English to the easier-to-pronounce telexistence around 1999. While Tachi appears to have been aware of Minsky’s concept by the time of his first publications introducing tele-existence in 1982, he claims the two terms were coined independently of one another, and that he first conceived of ‘tele-existence’ while walking the halls of Tokyo University in the early autumn of 1980, a few months after his return from Massachusetts (Tachi, 1982, ‘Tereiguisutansu no kenkyū (dai 2-hō)’; Tachi, 2002; Tachi, 2014: 35). While telepresence went on to become the standard term for subsequent teleoperator research in the US, under Tachi’s influence telexistence became a familiar concept within the Japanese robotics community.

According to Tachi the two words refer to essentially the same idea. But while telepresence has tended to focus on teleoperated robots in real-world locations, often positioned in contrast to VR’s focus on computer-generated worlds, telexistence can target either real or virtual spaces (or some mixture of the two), essentially combining the two fields. Further, while many products sold as ‘telepresence’ robots today focus primarily on the robot’s role at the worksite, without much concern for the operator’s perceptual immersion in the device, telexistence research has tended to
focus on providing an immersive perceptual interface for the teleworker. Rather confusingly, then, telepresence often prioritizes making it feel like the robot is ‘really there’ for others on-site (what Tachi calls a ‘feeling of existence’ [sonzaikan]), while telexistence is more interested in providing a highly mediated ‘feeling of presence’ [rinjōkan] in how the robot operator perceives the space they are operating within (Tachi, 2015: 217).

This early focus on creating a ‘feeling of presence’ for the teleoperator led Tachi to incorporate the stereoscopic (3D) head-mounted display early on as a key part of his more perceptually immersive robot interface. At the time most telepresence research was focused on the hands, with only rudimentary attention to audiovisual perception. For example, Minsky’s 1980 article describes a basic head-mounted display built by an engineer in Philadelphia consisting of a TV camera on top of a building that moved in tandem with a remote operator’s helmet, with the video feed visible to the operator through an attached screen. In Tachi’s first papers introducing telexistence, he argues for how a stereoscopic head-mounted display would be superior to the then-common ‘wave front’ visual reconstruction techniques for telerobot operation, citing Ivan Sutherland’s pioneering ‘Sword of Damocles’ stereoscopic headset from the late 1960s (now often considered the origin of the VR head-mounted display) but substituting a real-world remote camera feed for Sutherland’s virtual wireframe shapes (Tachi, 1982, ‘Tereigujisutansu no kenkyū (dai 1-hō)’; Tachi et. al., 1984). Tachi describes his early epiphany walking the halls of Tokyo University in the fall of 1980 as centering explicitly on the idea of using a stereoscopic display to perceptually enclose a human operator within a robot’s perspective:

I was suddenly reminded that all of human vision is just based on two images projected on our retinas, and we build the 3-D world by moving our heads and exploring the world. So if we replace that with a virtual image, what we experience is a kind of virtual world. Since we perceive the environment through sensors and reconstruct the world in our brains, if we gather that information from a robot and present it to the human, we can live through the experience of being embodied within the robot, existing in its specific environment (quoted in Scoica, 2015: 62).
Prior systems allowed teleoperators to see their own hands and arms while at the controls. Tachi’s tele-existence design instead positioned the operator within a larger control capsule, individually enclosing the operator’s head and directly interfacing with their hands and feet so as to more directly mediate their audio, visual, and tactile perception of a remote environment, more tightly synchronizing their perceptions with the robot’s [FIG 1]. When the operator looked down, they saw the robot’s arms in place of their own — what Mel Slater would later call the ‘body ownership illusion’ (Slater et. al., 2008). Tachi’s focus on producing a sense of presence through a head and body-mounted enclosure was virtual reality in all but name, and he adopted the term as another way to describe his research following Jaron Lanier’s popularization of the phrase in both the US and Japan in the late 1980s.¹


Tachi’s tele-existence control capsule became the central premise for an eight-year national project launched by the Japanese Ministry of International Trade and Industry (MITI) on ‘Advanced Robot Technology in Hazardous Environments,’ running from 1983 to 1991. Tachi at this point was employed by the Japanese government as director of the Biorobotics Division at MITI’s Mechanical Engineering Laboratory. His team presented their work as heralding the arrival of the ‘Third Generation Robot,’ moving on from the preprogrammed sequences of First Generation industrial robots and the limited two-dimensional sensor technologies of
the Second Generation. Operator access to head-mounted audio, visual, and tactile interfaces was a key part of the new proposal. While the MITI project’s charge was to create robots for use in dangerous environments like nuclear reactors, outer space, and under the ocean (echoing the American focus), Tachi’s team proposed using tele-existence in a range of more everyday settings as well: cleaning, civil engineering projects, agriculture, policing, expeditions, leisure pursuits, test-piloting, and test-driving (Tachi and Komoriya, 1982: 57).

Subsequent projects shifted even further away from the initial teleoperator focus on environments inhospitable to humans. As researchers attempted to scale up their research to a larger social level, research goals focused more and more on offering solutions to the challenges posed by Japan’s aging and shrinking population. This pattern is clearly visible by the time of the ‘Fourth Generation’ national Japanese robotics initiative beginning in the late 1990s, which aimed squarely at creating a ‘human-friendly and supportive robot.’ Tachi’s role in this project was to design a means of teleoperator robot control, to be paired with and compliment more autonomous robot designs (Tachi, 2014: 46).

Just how much the focus of telerobotics had shifted away from dangerous environments and towards more everyday settings is immediately clear from the very start of the project outline:

Japan’s population is aging rapidly and people are having fewer children. This means that efficient and human-friendly machinery that can support daily life and the activities of humans, such as attending to the elderly and the handicapped, is in great demand. Thus, this project aims to develop a safe and reliable human friendly robot system capable of carrying out complicated tasks and supporting humans within the sphere of human lives and activities. Through development of such a system, this project will contribute towards improvement in efficiency and safety in industry, making society and the living environment more convenient and comfortable, and towards the creation of new industries in the manufacturing and service sectors (quoted in Tachi, 2014: 44).
The project sets out with a focus on supporting daily life for seniors and people with disabilities, but quickly situates this humanitarian push within broader economic goals of increased efficiency and the creation of new manufacturing and service industries. This contextual drift towards broader economic concerns is key for understanding how telepresence research came to be shaped by the larger pressures of Japan’s changing demographics.

It was not as if Japan had a lack of dangerous scenarios where telepresence robots might be of use. In fact, it was considered a major domestic failure when, faced with the need to check inside the damaged nuclear reactors at TEPCO’s Fukushima Daiichi plant in 2011, Japanese teleoperator and robotics researchers were not ready with a home-grown technological solution, and borrowed American robots were sent in instead (Kawatsuma et. al., 2012; Robertson, 2011). By this time, however, Japanese telepresence research had drifted far from the field’s initial focus on operating in environments humans could not otherwise access.

By the end of the 1990s, Japanese teleworker robots were positioned less as disaster relief tools and more as a way to relieve the burden on care workers looking after the elderly or the sick. In practice, individuals in need of care due to age or illness came to constitute the ‘dangerous’ environments telepresence robots would operate within. A further shift occurred as Japan moved into the second decade of the twenty-first century, buoyed in recent years by the reemergence of popular interest in VR. By this time the broader implications of Japan’s labor shortage were becoming more apparent, going far beyond the fields of nursing and elderly care. A more general labor shortage emerged across a wide range of industries, particularly in service industries and in fields reliant on physical labor. This led to a further transformation in the way researchers imagined a future ‘telexistence society’ would function. While the late nineties telexistence engineers imagined sending robots out to work on the elderly and infirm, these same populations would now be called upon to become teleworkers themselves.

In some ways, this transposition returned telexistence research to Tachi’s original focus on disability augmentation, in line with his robotic seeing-eye dog for the blind.
However, the focus was now no longer on enabling people with disabilities to safely walk the streets, but rehabilitating the economic productivity of these same individuals, recasting them as an underutilized workforce. Mitchell and Snyder’s *Biopolitics of Disability* (2015: 11) captures the neoliberal logic behind this kind of transformation, noting the rise of “inclusive techniques that have less to do with a more expansive tolerance toward formerly deviant citizens than the appropriation of disability as an opportunity for expansion at the consumption end of late capitalist marketplaces” – or in Japan’s case, at the production end as well. The public-facing promise was still one of personal freedom, of giving increased agency and mobility to those who might otherwise not have access to it. But the deeper economic rationale was to provide a technological solution to the increasingly desperate search for human workers. The implicit premise was that telexistence would open up a narrow path for the otherwise immobilized to provide their services remotely, while leaving the more socially unwelcome parts of the worker behind. In effect, everyday Japanese society was now positioned as the ‘dangerous’ environment in which these new teleoperators would perform their work.

**Three Visions of a Telepresent Workforce: Tachi, Hirose, Yoshifuji**

This premise is clear in three recent proposals for enabling new populations of robot teleworkers, which this section will describe in turn. Tachi is now attempting to transform his telexistence research into a commercial venture, building on his now several decades of work on what he calls the TELESAR (Telexistence Surrogate Anthropomorphic Robot). In 2017 the venture-backed startup Telexistence Inc. was spun out of Tachi’s lab with the collaboration of Tokyo University and Keio University. The company’s main objective is to turn Tachi’s TELESAR into an off-the-shelf technology, the Model H, based on a concept where users purchase one of their suitcase-based VR ‘cockpit’ systems (with an HTC Vive headset and haptic gloves) and use it to access a fleet of remote robot bodies on call in various remote locations.

A recent promotional video for the company imagines the Model H put to use as a kind of bonding exercise for what appears to be an affluent white father and his son.
They smile in wonder as they use the VR headsets to teleoperate Model H units in varied sites on and off the planet. The video shows the Model H in outer space (gesturing towards the older telepresence focus on inhospitable environments), but otherwise focuses on more mundane tourist activities like shopping for surfboards in Hawaii and viewing cherry blossoms in Kyoto [FIG 2]. The ‘beyond presence’ slogan appearing at the end of the video even makes a subtle dig at Minsky’s original term. However, while the advertisement presents the Model H system as an upscale leisure product, Tachi’s website specifically highlights people with disabilities and the elderly as potential users.⁴

Figure 2. Using VR headsets (above) to view cherry blossoms in Kyoto through Model H telerobots (below). Stills from the Telexistence, Inc. promotional video Telexistence Model H unveil, available at https://youtu.be/K0OT67zqjP1.

This latter population is also the focus of a recent trade paperback by Michitaka Hirose, who alongside Tachi was the other main figure in Japanese academic VR research in the 1990s, and until his recent retirement led the Virtual Reality Education Research Center at Tokyo University. The book carries the unwieldy title Guide to the Latest VR for Making We Who Will Get Old Anyway Active for 100 Years (Izure oite iku bokutachi o 100-nen katsuyaku saseru tame no sentan VR gaido, 2016). The main premise is that VR telepresence technologies will rejuvenate the Japanese workforce by allowing the elderly to continue working past retirement age, well into
their 90s and beyond. VR, Hirose promises, will allow the bedridden to continue to work by swapping their own compromised physicality for a more powerful robot body.

Even if individual seniors may not be physically capable of holding down a full-time telework position, Hirose envisions a way to mix and match scraps of the elderly’s remaining laboring potential in order to assemble what he calls ‘mosaic’ labor solutions. He describes a system where different seniors could mix and match their skills, energy levels, and physical abilities in a flexible job-share telepresence platform he calls the ‘senior cloud’ [kōreisha kurando]. Hirose imagines the platform could allow several teleworking seniors combining their skills to replace one able-bodied worker (2016: 171). By consolidating whatever working potential remains among the elderly, he promises the system could alleviate the labor crunch and relieve the burden on those remaining Japanese still within regular working age.

Hirose’s senior cloud remains speculative, and Telexistence Inc. has yet to announce when the Model H will go on sale. To find an example of a telerobot platform already in regular use, we will need to go slightly beyond VR and consider the robots of Kentarō Yoshifuji and his company, Ory Laboratory. Yoshifuji was born in 1987, making him over three decades younger than Tachi and Hirose (born in 1946 and 1954, respectively). Yoshifuji’s approach to telepresence is also technologically simpler than the systems coming out of the university VR labs, aimed at producing affordable consumer products in a far shorter timeframe. The company currently produces a relatively simple telepresence robot named OriHime. OriHime consists of a small upper torso with a head and wing-like arms that can each tilt and rotate, along with a camera, microphone, and speaker built into its body. While Yoshifuji has experimented with VR interfaces for eye-tracking, at this point his robots do not rely on a head-mounted display. Instead the teleoperator controls head and arm movement through an app interface on a phone or tablet, and communicates over live two-way audio and a one-way video feed from the robot’s camera. Yoshifuji has also developed automated speech systems to make the platform accessible to those with a more advanced loss of muscular control.
The original OriHime model has no lower body and must be moved and positioned by an on-site human attendant. A larger wheeled version that can be remotely steered and pick up simple objects is also under production, called OriHime-D. The potential for this version to allow telework in service industry jobs was on display in a recent ‘experimental café’ Ory Laboratories presented for several weeks in late 2018 with the sponsorship of the Nippon Foundation and All Nippon Airlines. The space was modeled after the fictional android café in the anime web series Time of Eve (Ivu no jikan, Yasuhiro Yoshiura, 2008-10) which stipulated customers ‘do not distinguish between humans and robots.’ Yoshifuji’s café employed bedridden or hospitalized teleworkers with ALS (amyotrophic lateral sclerosis) to guide the robots remotely, with the goal of opening up a more permanent venue in time for the 2020 Tokyo Olympics.

In contrast with Tachi and Hirose’s more speculative proposals, Yoshifuji has worked closely with the individuals his robots most directly set out to help. His many media appearances feature inspiring stories of people with isolating disabilities whose lives have been transformed by his work, and he has employed several individuals with severe disabilities as OriHime teleworkers in his own company. Yet Yoshifuji shifts to a similar economic rationale as soon as he moves from addressing specific disability challenges to speculating on the larger social implications of his teleworker platform. In interviews, he describes OriHime as a way to allow people with disabilities to serve as a new workforce for cafés and other service industries that are increasingly struggling to find, pay, and retain in-person workers (Lam, 2019).

Throughout his publications and many media appearances Yoshifuji makes two main promises for teleworkers using his platform: that working through OriHime will restore freedom [jiyū] and eliminate loneliness [kodoku]. The Japanese language commonly refers to disability as a form of fujīyū, literally unfreedom. In this way Japanese already implicitly positions the normatively able body as, by definition, free. But Yoshifuji quickly expands the scope of who might be considered ‘unfree,’ noting that able-bodied people can also lack freedom at times, and that using the ‘second body’ of the OriHime could help them as well. He often references his childhood, when he did not attend school for three and a half years and became a bikkikomori.
(social recluse), and when he later began designing OriHime prototypes in college so he could remain at home but have the robot attend classes in his place. Similarly, Yoshifuji describes his company’s mission not in terms of disability rights, but as about enabling the ‘erasure of human loneliness,’ a promise that also serves as the title of his first book (Yoshifuji, 2017). The underlying individual promise here, if we tie it back to Goertz’s work at the Argonne lab, is that telepresence robots can offer anyone new ‘degrees of freedom’ by relieving them of the need to deal more directly with an inhospitable outside world. But what does it mean to situate the telepresence enclosure as a source of physical freedom and a cure for social ostracization?

Spatial Segregation and the Privatization of Presence

The freedom promised by Tachi, Hirose, and Yoshifuji’s telepresence platforms comes with very specific limitations. Nothing in Tachi or Yoshifuji’s commercial telerobots enables a direct face-to-face encounter between operators and those they are communicating with. Unlike almost all telepresence systems produced outside of Japan, Model H and OriHime do not include a screen showing the operator’s face. Instead, the robots’ appearance is determined by their own white plastic heads, arms, and bodies [FIG 3]. The designs are generally humanoid in shape but deliberately non-descript, diminutive, and vaguely alien in appearance. According to Yoshifuji, OriHime is also genderless, despite the implications of the hime (princess) suffix and the skirt-like lower body design of the larger version.³ Yoshifuji argues this abstracted appearance allows those who encounter the robots to more easily project emotions and personalities onto them as they see fit. In practice, the physical person of the worker is replaced with a cute, infantilized appearance designed according to the norms of Japanese character culture. At Yoshifuji’s café, visibility of the teleoperator’s human body was otherwise limited to a small profile photograph connected to the robot they were operating and a short biography posted on a café wall. When I later spoke with an OriHime temporarily installed at the Tsutaya bookstore in Daikanyama, Tokyo, the operator was given a name but no face at all. Yoshifuji’s picture and bio, however, were prominently displayed next to a stack of his books.
The invisibility of the operator in these commercial systems is in stark contrast to Tachi’s earlier telexistence projects of the 1980s and 90s, when he was adamant the visibility of the operator’s face (even if just as a crude projection onto the robot’s head) was crucial for enabling an ethical relationship between the teleoperator and the people they encountered via the robot. Describing this as a principle of ‘anti-anonymity,’ Tachi wrote, ‘it is unnecessary to discuss how dangerous it would be without a system which enables the visibility of the user’ (2014: 18-23). Yet this is exactly the approach adopted by these later systems as they shift to focus on providing a socially acceptable feeling of the robot’s ‘existence’ (sonzai kan) for the customer on the other end.

Yoshifuji claims he experimented with showing the operator’s face on a monitor attached to the robot, but this increased the feeling of emotional distance for people interacting with the OriHime, rather than making it feel like the OriHime as a robot was there in the room with them.⁶ Revealingly, Yoshifuji’s concern here is that the enclosure enables a positive experience not for the worker operating the device, but for those on the receiving end of the worker’s services. In other words, the robot’s appearance is part of the emotional labor performed by the platform, largely erasing all trace of disability from the scene. In his defense, Yoshifuji claims that many OriHime operators prefer to remain invisible, not wanting to show their faces or homes on camera. While the potential appeal of swapping out a socially marginalized body for a more anonymous and idealized appearance cannot be denied, in this
system it is ultimately Yoshifuji himself who decides how the teleworker will appear to the world, and who sets the limits on how the worker can become ‘present’ within it.7

This kind of power differential is present across these telerobot platform proposals. While they are promoted as a way to empower otherwise immobile teleworkers with greater social freedom, arguably it is the robots and their associated creators that are made socially present, much more than the workers themselves. This dynamic is echoed in the marketing materials and books produced by Yoshifuji and his company, which focus overwhelmingly on promoting his own brand, and only rarely include anything more than brief testimonials from the robots’ everyday operators.8 While Tachi and Yoshifuji have both worked on more fully-embodied mobility technologies in the past (like Tachi’s robotic seeing-eye dog), telepresence robots do little in themselves to make public spaces more physically accessible or socially accommodating for disabled bodies. By promising social mobility even as they stand in the way of a more equitable society, these telerobot platforms exemplify what Ruha Benjamin (2019: 156) describes as “pragmatic inclusion in place of political and social transformation.” If anything, these proposals suggest public spaces should be designed around supporting robot presence, rather than making spaces more welcoming to a wider range of humans.

The platforms’ erasure of visible disability is paired with a strong underlying message that work is the only path towards a meaningful social existence, what Aimi Hamraie (2017: 71) describes as an “imperative for productivity” often cited as a rationale for bringing “all” citizens into the economic fold, despite ongoing forms of spatial segregation targeting people with disabilities or from other marginalized groups.9 Yoshifuji frequently insists the best cure for loneliness is gainful employment, or what he describes as a shift from being someone who people are always doing things for [shite-kureru] to being someone who does things for others [shite-ageru]. As with Hirose’s senior cloud proposal, work is positioned here as the primary way to prove your value to society, while being a burden on society by not working (even at age 100) is presented as a lonely (and perhaps even selfish) social failing.
In the ultimate neoliberal twist, Tachi and Yoshifuji even go so far as to imagine telerobots one day enabling the bedridden to even take care of themselves. In this imagined telexistence society, the elderly and people with disabilities would not only be expected to contribute to society through telework employment — no matter their condition — but also to use the robots to provide for their own physical care. This would fold the telepresence circuit back on itself, positioning the socially excluded as both the teleoperator and the dangerous environment to be operated upon. It would also, both of them imply, relieve the rest of society from the need to attend to these individuals at all (Tachi, 2014: 22; interview with Yoshifuji in Lam, 2019).

Tachi’s current proposal for a future telexistence society echoes Hirose and Yoshifuji’s call for enabling seniors and persons with disabilities to keep working, but he includes two other populations of would-be teleworkers as well [FIG 4]. The first consists of parents working from home while raising children. In Tachi’s illustrations this stay-at-home parent is always pictured as female, and somehow manages to look after young children while enclosed within the VR headset. Second, Tachi proposes using his VR system to employ overseas workers at low cost through cross-border intercontinental telework. By doing so, he argues, Japanese factories and worksites could leverage time-zone differences to stay in operation twenty-four hours a day through interlocking work schedules. The illustration envisions three 8-9 hour shifts shared between workers in Nigeria, Japan, and Mexico. The cheaper wages in the foreign teleworkers’ home countries would keep costs down, while still contributing directly to sustaining Japan’s domestic productivity.

Overseas VR telework promises a way Japanese employers can extract physical labor not only from the dwindling number of Japanese, but also from foreign nationals otherwise excluded from the workforce by national borders. This is a direct extension of earlier cross-border telework and outsourcing strategies of the nineteen-eighties and nineties using phones and computers, extended now from that largely white-collar context to the blue-collar realms of manual labor and service industry jobs. The premise here is to teleport only the worker’s laboring ‘presence’ while leaving the rest of their physical identity — including their citizenship status and legal rights — for their home country to deal with.

In a revealing aside during a keynote I heard him deliver at the Digital Content Expo in Chiba in November 2018, Tachi suggested cross-border VR telework as a way to allow Japan access to foreign labor while avoiding the ‘problems’ [mondai] of direct immigration (Tachi, 2018, ‘Telexistence Today’). This vague reference to immigrants as ‘problems’ echoes a recurring theme Jennifer Robertson (2017: 19) has identified in Japanese robotics more generally: a preference for robotic solutions to the labor shortage as a less culturally threatening (and more politically palatable) alternative to dramatically increasing the number of foreign workers in Japan. While the ruling Liberal Democratic Party recently pushed a controversial immigration reform bill through the Japanese legislature — set to increase the number of lower and medium-skilled work visas by 345,000 over the next five years — the changes still fall far short of fully addressing the labor shortfall. In the meantime, existing programs to provide foreign labor on a more short-term basis, such as the Technical Intern Training Program, have been notoriously vulnerable to employee abuse and exploitation (Lang, 2018). Tachi’s proposed system would instead selectively transmit VR telepresence across the network, keeping foreign workers’ physically out of sight and behind closed borders.

**Conclusion**

The power relationships inherent to the telepresence enclosure ensure teleworkers will remain highly dependent on whoever controls the telework platforms of the future. As Grau (2003: 290) writes, for telepresence the decisive questions are ‘who controls the channels, who distributes rights of access, and who exercises economic
and political authority over the networks.’ The virtual mobility of the teleworker extends only as far as the labor market allows, and can be unilaterally revoked at any time. While robot telework promises new freedoms for those employed, and may indeed be life-changing for those with no other paths for social participation, in practice it is employers who are the most liberated by the arrangement. Embodied telework risks extending the social erasure of the elderly and people with disabilities, and the further effacement of the foreign workers keeping the service and manufacturing industries of countries like Japan afloat.

Hirose, Tachi, and Yoshifuji each promote telerobotics as a more human alternative to full-scale automation, even as they play up their technology’s advantages over on-site human labor and increased immigration. Yet despite this premise of telerobots as a more human-centered alternative to artificial intelligence, in all likelihood teleoperators will mostly work in tandem with automation strategies targeting these same jobs. The most economically plausible scenario is a blend of the two approaches, relying on automated systems for most tasks while falling back on remote human operators for roles where a live human still has an advantage. This is already happening in existing online teleworker platforms, where piecemeal human labor often provides a kind of stopgap intelligence to make up for where full-scale automation still falls short. Data generated by the human operators can also be used to train later autonomous replacements, an explicit aim of telepresence robots like Toyota’s T-HR3. Generating autonomous teleworker ‘clones’ has been a key objective of teleworker systems going back to Tachi’s original Third Generation robotics concept, which described how a human in the control capsule could switch between direct ‘telexistence mode’ and a more supervisory role over a squadron of semi-autonomous robots, all the while building up their ‘knowledge base’ [chishiki bēsa] for future projects (Tachi and Komoriya, 1982: 54). Tachi (2014: 31) speculates such behavioral recording could one day mean that ‘even after a person passed away, the person can exist for a long time in the form of his/her telexistence avatar robot,’ potentially enabling the person’s (now fully privatized) laboring presence to continue working even beyond the grave.11

Elsewhere in the same book, Tachi envisions a future scenario where society has become so robotic that much of the outside world is dangerous for an unprotected
(normative) human body, leading people to mostly stay indoors. Future humans may still want to participate in activities outside the home that have been taken over by robots, but ‘in practice,’ Tachi writes, ‘working in the same location as robots and machines is extremely dangerous.’ In this scenario, robotic telepresence ‘provides a method by which a person’s desire to be involved in activities performed by robots and machines may be satisfied in a manner that does not infringe upon safety and social considerations’ (Tachi, 2014: 241). Telepresence’s original goal of human operation in dangerous environments here comes full circle: as telepresence becomes the default, physical movement beyond the home becomes inhospitable to more and more human bodies, accessible only by means of the telepresence platform. The entire population becomes technologically housebound, reliant on the telepresence enclosure to be ‘present’ anywhere at all. While Yoshifuji and Tachi promise to center the experience of the human operator, this is quickly revealed as but one step towards a broader posthuman future, built off the data of those who may have had little choice but to surrender their embodied labor to the platform.

The infrastructure for an embodied teleoperator workforce is already emerging through the confluence of VR, robotics, and higher-bandwidth 5G networks. Again, these platforms may well open up welcome new opportunities at the individual level for those without other avenues for social participation. More ethnographic research with the operators themselves is certainly needed, along with a deeper engagement with perspectives from disability studies and aging studies than I have been able to provide here. From a broader population-level perspective, however, it seems clear one major effect of these platforms would be to further shift the burden of sustaining society onto those still not fully welcome within it, relieving socially dominant groups of the need to more fully incorporate or accommodate these populations. The telepresence enclosure forecloses ways these groups might otherwise contribute to the transformation and renewal of social space, what Mitchell and Snyder (2015: 6) describe as ‘the creative ways in which lives experienced within differential bodies transform the environments of which they are a part.’ This kind of creatively transformed space might well involve VR and other telepresence technologies — this is not an argument for rejecting all forms of
mediated interaction. But a more livable and just platform for VR telework will need to be driven by principles other than labor extraction and enclosure.

The biggest social risk of VR is how it opens up a perceptual gap right where bodies become present to the world, allowing outside parties to move in and establish control. Whether from Facebook or others, current visions for VR telework risk consolidating private control over media platforms not just governing online communication, but how people perceive the space around them, who is rendered as physically present, and in what form. VR telepresence is on track to develop into a more fully embodied version of what Safiya Umoja Noble (2018) calls technological redlining, or the way algorithms can intensify already existing spatial and social inequalities. The more VR becomes a practical substitute for in-person social presence, the more existing infrastructure for human movement may be neglected, accruing even more power to whoever controls the digital pathways presence is now made to travel. Before VR telepresence platforms become firmly established, it is incumbent upon all those involved to take a close look at whose interests are being served in the shift to remotely embodied work, and more carefully theorize what it means to be ‘present’ within this space of technological enclosure.

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Notes

1 A major turning point was the Engineering Foundation Conference in Santa Barbara in 1990, which brought together telepresence and VR researchers from around the world (including Tachi and Hirose) and led to the founding of the journal Presence: Teleoperators and Virtual Environments at MIT in 1992. Tachi describes the gathering as a ‘big bang’ when (for him at least) the two fields came together around the quest for a life-sized 3D interface (Tachi, 2013: 4).

2 For more on this context, see Sone, 2017; Robertson, 2017; Frumer, 2018.

3 While beyond the scope of this essay, this can be understood as part of a broader trajectory in postwar Japan, first towards consumer technologies and then towards building the ‘information society’ as central pillars of economic growth. See Partner, 2000; Morris-Suzuki, 1988.

4 See https://tx-inc.com/ and https://tachilab.org/about/company.html

5 On the gendering of Japanese robots, see Robertson, 2017 (chapter 4).

6 Twitter thread from Yoshifuji (@origamicat), 3/2/19 11:52pm. https://twitter.com/origamicat/status/1101857732456460288

7 This is not to say the OriHime operators have no public voice outside of the official platform. There is a small community across Twitter and various blogs of ‘OriHime pilots’ [Orihime pilottot], as they often describe themselves, offering a glimpse of what it is like to work as an OriHime beyond Ory Laboratory’s official marketing.

8 See Yoshifuji, 2019 (published under the name Ory Yoshifuji); see also Yoshifuji’s Twitter account @origamicat.

9 Diane Wei Lewis (2018) identifies a similar discourse surrounding the exploitation of women’s home-based labor in the Japanese animation industry.

Sections of the last three paragraphs draw from Roquet, 2019.

Disability studies scholar Mark Bookman (2019) offers a far more enthusiastic account of the Ory Laboratory café on his Accessible Japan blog. On telework and disability, see also Light, 2001; McNaughton et. al., 2014; on media theory and disability more generally, see Ellcessor and Kirkpatrick, eds., 2017.

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Contingency and Causality:
Post-digital Handwriting
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Abstract
This article analyses specific acts of handwriting on paper in relation to digitization. It frames the artifact of the digital image of the handwritten note as a post-digital object, which is defined by the inseparability of analogue and digital and also highlights a relation to the digital in which internal opposition is a part of it. The article discusses the media function of post-digital contingency through two particular cases of handwriting on paper that circulates online. Firstly, it analyses post-digital handwriting in the political sphere using the example of the social media posting and sharing of Donald Trump’s signature after he took presidential office. Secondly, it elaborates post-digital handwriting as an aesthetic phenomenon by discussing the Instagram account of renowned Swiss curator Hans Ulrich Obrist who has posted nearly 4,500 handwritten notes to 320,000 followers over eight years. Finally, it places these discussions into the context of the philosophy of Martin Heidegger to arrive at a better understanding of how the ontological difference of post-digital handwriting is produced.

Keywords

Introduction
What is handwriting in a post-digital infrastructure? Is there a specific quality to texts that are visibly forged by the human hand that endows them with a particular attraction in an age where distinctions between digital and analogue are increasingly difficult to uphold? These are the main questions that this essay sets out to answer.
Rather than discussing all forms of handwriting, I’m interested in how specific acts of handwriting are used and understood in digital milieus (Hörl, 2018: 160). The possible range of analysis could be expanded, but for this article I have limited my cases to the online circulation of digital objects as images of written notes and writing by hand in contemporary art and politics respectively. The art scene is interesting because it typically picks up and explores the expressive possibilities of media and cultural techniques as part of an aesthetic process. The political realm is, for its part, currently undergoing deep transformations as a result of the expanding digital infrastructure and its regulation of information and knowledge, which in turn regulates power in Foucault’s sense. Other cases of interest are cognitive and psychological realms, in which a quality of intimacy inherited from handwriting in modernity is renegotiated through the post-digital; a topic I have explored elsewhere (Wickberg, 2020).

As a medium, writing has often been at the center of theoretical discussions on knowledge and communication over the past century. According to John Durham Peters, writing is a medium that extends memory and alters the three fronts of civilization: ‘relations within the self, between people and between people and nature’ (Peters, 2015: 262). As such, it has gone through a large number of transformations since its dawn in the second half of the fourth millennium B.C., but its main feature as externalization of human speech has remained relatively intact. This relational quality of writing has successively become ever more efficient with each technical transformation. Writing in the modern sense emerged from accounting without this being the primary purpose of the innovation. Rather, it was the context-dependent administration of transactions handled with small tokens of clay that, when it needed to be taught to bigger groups of people, had to be functional outside of the given context (Renn, 2015: 47). From the perspective of cultural evolution and historical epistemology, these types of new possibilities of a technical innovation often occur as a side-effect of the mainstream applications. It is also characteristic that these founding roles for a new development are only realized once a new perspective and new contexts arise (Renn, 2015: 48). This perspective also resonates with the insight that new media make older media visible, which has been a point of departure for media theory since the work of Harold Innis (1948). That perspective, however, is chronologically converse and looks at how older media can be studied and live on
within new media, a practice that is also the foundation of media archaeology. Taken together, media theory and historical epistemology stage writing as the founding medium of civilization, emerging almost by accident and then continuously being embodied in new technical systems.

**Handwriting as a Cultural Technique of the Post-digital**

The most recent of these embodiments of writing is the digital shift, which has put the cultural technique at the fingertips of a growing global population with smartphones, allowing the relations between self, people and their environments to be extended at any time. In this situation, the concept of ‘post-digital’ emerged as a way to account for both the inseparability of digital and analogue, and the underlying digital wiring of almost all aspects of daily life, including the internet of things. Above all, it’s meant to signal a shift away from a time when the digital was optional and particular rather than a given and ever-present. The cultural technique of writing is of course present on all three levels of digital media; as inscription on a hardware level, as code on the software level, and as semantic units through the interface. Even handwriting has found a place on this last level with devices like the apple pencil for drawing and writing, and apps that remEDIATE paper in their interface, while the handwritten paper note operates on a post-digital level when it’s circulated as a digital object in networked systems.

In the longer cultural history, handwriting has been challenged by technologies of imprint over the five centuries since the Gutenbergian revolution, yet it has always somehow survived (Neef, 2010). One could argue that the reach of digitization far exceeds those of previous writing technological shifts, but that would be overlooking the fact that technologies of writing and literacy have always been closely aligned. Sonia Neef has pointed out that the oft-repeated question of whether handwriting will survive digitization is philosophically and historically incorrect (2006: 8). She notes that philosophically it is erroneous because it assumes a teleological relationship between media and their practices. Understanding handwriting historically, she contends that “in spite of the emergence of generations of ‘writing machines’, manual script has never disappeared; on the contrary, as it evolved,
handwriting adjusted its practical functions, social meanings and cultural aesthetics” (2006: 8).

The problem posed by post-digital handwriting can also bring the concept of remediation to mind, which is used to analyze how new media are always depending on the logics of older media (Bolter & Grusin, 1999). An extension of this concept is ‘premediation’, which refers to handwritten signatures in digital media, complementing the perspective that remediation offers on ‘the refashioning of prior media forms and technologies’ with ‘the cultural desire to remediate future media forms and technologies’ (Grusin, 2006: 98). But the concept of the post-digital is different from remediation. It has been described as a phenomenon that takes place when digitization is so abundant and evident that it no longer provokes wonder and techno-optimism but also resistance and distancing within the digital itself (Cramer, 2014: 13). The main features of this condition are disenchantment with the digital, the reviving of old media, and the collapse of distinctions between the digital and the non-digital: “The historical distinction between the digital and the non-digital becomes increasingly blurred, to the extent that to talk about the digital presupposes an experiential disjunction that makes less and less sense” (Berry, 2014: 22). The post-digital art and media festival Transmediale’s 2016 jubilee reader Across & Beyond (2017) gathers important contributions from across the field of media theory and arts in an exploration of the concept that resists a unifying answer. Instead, they propose thematic lines to catch hold of the ‘post-digital contingencies’ across the continuum of theory and practice. The notion of the post-digital they propose resonates with my concept of post-digital handwriting in the emphasis on contingency and, a point further stressed by Florian Cramer (2014) in his contribution to the volume, the refusal of a shallow notion of ‘post’ as only being a chronological marker, much like what happened to the notion of postmodernism.

Recent media theoretical readings of Heidegger and Simondon emphasize that a culture of behavioral control flourishes in digital milieus that has become constitutive of worlding and experiencing in digital cultures (Hörl, 2018: 156). This sums up the deeper logic of the post-digital condition quite well and, in it, media move from being machines of communication to machines of capture of the unsayable and unthinkable (Parisi & Hörl, 2013: 39). How then does this situation affect
handwriting? It seems that the specific logic of the digital in moving away from communication allows for a repurposing of the handwritten note which is no longer primarily semantic but rather acts as a trace of contingent causality, since we’re dealing with a networked digital object made up of data, metadata and user experiences. The interrogation of the existence of digital objects, based on Simondon’s concept of milieu, offers a useful working definition of life cycles in three stages that can enhance our understanding of post-digital handwriting.

The first process is that in which the ontologists and computer scientists create a metadata scheme or ontologies for digital objects; the second process is the implementation of these schemes in databases and pieces of software, which creates a milieu for the digital objects. The digital object can hence be seen to exhibit its modes of being by situating itself within the digital milieu. The third process to be understood is that by which these objects and the machines construct a technological system, which further integrates human users into it. This triangle is composed of different technical ensembles (Hui, 2016: 75).

There is thus a relational traffic inherent in digital objects, which is essential to understanding the post-digital. The being of a digital object is constituted by its relations of different orders: in the digital milieu created by databases, software and interface, and by situating itself in this system where humans become integrated as users.

**Writing and Paperwork**

The various screens we spend our days gazing at encourage the constant consumption and production of the written word. But what of handwriting? Many attempts to theorize it as a medium have been done, notably by Friedrich Kittler (1985) and Walter Benjamin (1936), supplemented by an increasing number of studies on paperwork in recent years (Wickberg, 2018; Gitelman, 2014; Kafka, 2012; Krajewski, 2011). In these studies, paper appear as a foundational media format which is primarily understood historically, and whose media function of inscription through writing remains in the deep logic of the digital. The difference is of course
ontological, in that the contemporary act of inscription remains hidden from the perspective of the user, but it nevertheless governs transactions and relations in a most fundamental way. Many of these studies also stress the importance of paperwork for the design and construction of a digital infrastructure, in a way that goes beyond the concept of remediation.

Paper and documents are essentially inseparable and mutually defined by what Lisa Gitelman calls the ‘know-show’ function, understood through their status as epistemic objects (Gitelman, 2014). On the one hand documents of paper contain knowledge, and on the other hand they exhibit this knowledge. This function is foundational to modernity in general and to modern bureaucracy in particular, aptly captured by the dictum of Philip II of Spain, ‘Quod non est in actis, non est in mundo’ (‘what is not on file does not exist’). The transformation of the logic of writing in early modern bureaucracy through accounting and the diagrammatic use of paper can be understood as a foundation to the 20th century passage into the digital by means of computation (Siegert, 2003). The idea of a long passage into the digital resonates with notions of the post-digital in the insistence on the deep cultural logic of the computational revolution, embedded in cultural techniques of sign practices:

Firstly: It is not about semiotics, but about Cultural Techniques of writing, reading, signs and numbers. Secondly: signs are not ideal objects, but externalized things; they belong to the world of res extensa and take their position accordingly. The symbolic world is the world of machines, which can also be made of paper. Thirdly: Sign practices are always connected to specific spaces, particular semiotopes, as it were: the office, the ship, the atelier, the laboratory, the academy, and so on (Siegert, 2003: 14, my translation).

This connection between sign practices as cultural techniques and specific environments can also be understood in connection with the physical spaces where writing takes place as ontic operations producing ontological concepts (Wickberg, 2018). In this way, media theoretical studies of paper and post-digital practices converge in an ontology of writing which refuses separations and clear-cut breaks, and instead understands media as part of different environments. This essay continues this trajectory by exploring acts of handwriting on paper in the realm of
the post-digital, as a practice dependent on physical space and restricted time in which the sign function collapses under the weight of the trace.

**Post-digital Handwriting and Social Media**

In my analysis, handwriting on paper is reconfigured as a post-digital object appearing as a networked digital image, through which the trace of contingency is highlighted in various forms of data and metadata on the social media interface. I will explore the issue first in the performative politics of post-truth Trumpism and then in what Timothy Morton calls the ‘aesthetic dimension,’ taking the Instagram account of curator Hans Ulrich Obrist as my case. According to Morton (2013), the aesthetic dimension is where the traces of causality can be found: ‘If things are intrinsically withdrawn, irreducible to their perception or relations or uses, they can only affect each other in a strange region out in front of them, a region of traces and footprints: the aesthetic dimension’ (Morton, 2013: 17). This means that interactions between objects have consequences even when we cannot see them, because they are in their *being* essentially withdrawn, a term borrowed from Heidegger to express that a part of something is ontologically present, yet not graspable as such to the human subject. The aesthetic dimension is a space in front of the object where interactions occur, and what we perceive as causality are traces of those interactions: ‘the interobjective space is the aesthetic dimension in which the appearances of objects interact in what we call causality. There is no way to determine the boundary of this space in advance’ (Morton, 2013: 177). So, the aesthetic dimension is what we see of an object and its interactions with other objects. If we supplement Morton’s theory with Yuk Hui’s phenomenology of digital objects, it becomes possible to say that post-digital handwriting represents the coming together of paper and networked data and what we experience as a composite phenomenon is really an effect of these interactions. In Morton’s view, the aesthetic effect is dependent on absence, so that every trace and footprint we encounter as art is echoing with what is no longer present (2013: 18). For post-digital handwriting, the absence of the sensory qualities of pen strokes on paper, their sounds, smells and the haptic movement of human hands, are present in their absence on a smartphone screen whose interface embeds
them in an Instagram feed of metadata. The turn to short videos of handwriting on Instagram exemplifies this tendency as it reinforces intimacy (Wickberg, 2020).

Following the 2016 U.S. presidential election, the handwritten signature of Donald Trump went viral on social media, sparking a number of interpretations of its emblematic significance. As a prolific Twitter user, Trump has since made it part of his political practice to post images of himself signing documents. These objects, that posit themselves in their digital milieus as images of the act of handwriting on paper, are instances of what I call post-digital handwriting. I understand this phenomenon as a dynamic process where the post-digital object is both made up of the handwritten note itself, ink on a piece of paper – and the data and metadata of social media, user experience and interactions. This process recalls the concept of remediation (Bolter & Gruisin, 1999), but what I want to address goes more into how the contingent every-day object of the handwritten piece of paper and its haptic and human associated qualities follows a different media logic as a networked digital object. In brief, I am more interested in the ontology of the post-digital object than with how digital media achieve their cultural significance by paying homage to, rivaling, and refashioning earlier media.

As one of the most influential curators in the contemporary art world, it is interesting that Hans Ulrich Obrist is using the social media platform of Instagram to disseminate imagery of the cultural technique of handwriting on paper. He invites different persons, often artists, philosophers and musicians, to produce a handwritten note, which he then publishes on his account. Tirelessly posting notes every day, his feed now comprises around 4,500 posts and is followed by 320,000 users. He thereby cleverly converts his account to a huge collective art gallery in which the cultural technique of handwriting on the everyday medium of post-it notes are co-constituted with a contemporary social medium through the interobjective space of the aesthetic dimension (Morton 2013).

**The Performative Nature of Post-digital Handwriting**

An intriguing example of post-digital handwriting is the political signature and signing practice of the U.S. President Donald Trump. Since the present decade, handwritten notes appear as an exception of communicative singularity in an
infrastructure of instantly accessible data. When images of the singular piece of handwriting on paper appear in this as a digital object, it distorts the media logic of the digital, even if what we’re seeing is only an image of the singular object. Signatures have of course been endowed with a special status throughout modernity and are tightly tied to notions of authorship and authority. In this sense, the signature has already been performative for the past five centuries, regulating a variety of formal affairs (Neef, 2006: 221). Today, we know that most important political communications happen via mobiles and computers, as the numerous leaks reveal, and that storage, access and transfer of nearly all political data is now digital, but the very event of a politician’s hand holding a pen and signing a document is still the legally binding event. The action of the signing itself has consequences, i.e. causality, and cannot as easily be undone or changed once it is carried out. The digital object of the networked image of this event becomes the ‘distorted archaeological trace’ of the collision of objects taking place in the aesthetic dimension. This means that images of political signatures and writing scenes is not qualitatively new in the 21st century, but the way these images are now used and circulated signals a shift toward post-digital media practices.

Donald Trump’s love for Twitter is by now obvious to anyone who has followed U.S. politics the past four years. He often posts images of himself at work and often in the process of signing bills and orders. These images have been picked up by Twitter users who come up with ingenious interpretations of what his signature represents.

Examples include ‘the gates of mordor’, ‘a soundwave of demons’, ‘and a lie detector chart’ (Voon, 2017). When he took office, his counselor Kellyanne Conway tweeted ‘The pen is ready’. A couple of weeks later he had already signed controversial bills of travel bans and the building of a wall along the Mexican border. At the time of writing, 33 environmental regulations and environmental protection laws have been undone, and another 24 are underway.

One of Trump’s first actions of power after assuming office in 2017 was the passing of an anti-abortion law called the ‘global gag rule’, which stops American aid to help organizations that facilitate abortion – the very same law that George W. Bush’s office used to stop aid to several African countries, leading to an increase in the
spread of HIV. The Guardian’s reporting of Trump’s action captures the agency of post-digital handwriting quite well: “How Trump signed a global death warrant for women. With one devastating flourish of the presidential pen, worldwide progress on family planning, population growth and reproductive rights was swept away. Now some of the world’s poorest women must count the cost” (Boseley, 2017). The image of Trump with pen in hand signing a bill surrounded by his closest male associates (many of which have now been replaced) went viral on Twitter and Instagram, and came to represent how a powerful white man, repeatedly accused of sexual misconduct, surrounded by six other white men in suits, signs a paper which will effectively stop millions of women globally from deciding over their own bodies if they become pregnant. It simultaneously reflects the performative aspect of political signature and the causality it represents when circulated as an image, which become a distorted archaeological trace.

Political decisions are generally slow processes and Trump’s impulsive political behavior makes the pen appear as a natural extension of his power. While the White House orders a specific presidential pen for the office, Trump abandoned it early on and instead started using his longtime favorite, the Sharpie marker pen, which gives a thick bold imprint. The pen came into a publicity storm after the President allegedly used it to alter NOAA’s meteorological forecast of Hurricane Dorian’s path so that it appeared to hit Alabama. Images of Trump with his pen again went viral on Twitter and memes were posted with images altered with a Sharpie-pen. The scandal became known as ‘Sharpiegate’ in reference to the pen Trump used to alter the forecast map. NOAA was forced to smooth over the disagreement with Trump by releasing a statement saying he was correct. The political implications of this practice are arguably enormous, but it also shows how the President’s pen and handwriting become emblematic and go viral on social media. Soon after the scandal, Trump and his campaign started selling Sharpie pens as official Trump markers, to ‘set the record straight’, with Trump’s signature printed in gold on them.

Above all, the traces of Trump’s political signature signal a reversal of the former logic in which imagery of politicians signing bills more often implied the celebration of progress, whereas now many posts, particularly of Trump perhaps, seem to use it as a representation of a negative consequence. The digital imagery of Trump’s
writing scenes also captures an age old symbol of the pen as a tool of power, going back to the shift from sword to the plume in early modernity. From the perspective of the Trump administration, as Conway’s remark suggests, the signing of bills shows the president to be as actionable as claimed in his campaign, ‘getting things done’, as has been a recurrent expression of praise among his supporters.

Donald Trump showing the forecast map of Hurricane Dorian with the additional black marker over southern Alabama. Source: Wikimedia commons.

The Aesthetic Dimension of Post-digital Handwriting

The signature of Trump’s Sharpie pen as political causality draws attention to an aspect of handwriting that was long considered obsolete, namely graphology. The 19th century pseudo-science of interpreting personality traits through the study of handwriting seems to have gained attraction through the renewed and emerging interest in handwriting in the post-digital, which can be seen in the trends of bullet journaling and penmanship porn (Wickberg, 2020). The graphological analysis is now mostly practiced by Twitter and Instagram users who see in Trump’s signature an expression of his aggressive and unpredictable character. But the fact that handwriting analysis is now being developed as a tool for early detection of Alzheimer’s disease suggests that there may actually be a deeper connection between handwriting and psychology (Ghaderyan, 2018).
Californian artist Lutz Bacher presented an exhibition in 2017 of a 90x3 foot paper printed with a loop of Trump’s signature around the walls of the gallery 3320 18th Street in San Francisco. In the space of the gallery, the signature of Trump becomes an instance of post-digital aesthetics, moving from paper to screen and back. Rather than a simple critique or satire, this work of art draws attention to the symbol of the President’s political authority, the strokes of his pen on paper, which materialize his ideas and turn them into political reality. From an OOO perspective, the artist is highlighting and magnifying the traces of causality happening in the aesthetic dimension. It is in this sense that art is about causality, in that logic and rhetoric come together to highlight substance and matter, their collisions and the effects they cause.

Within contemporary art, the term ‘post-digital’ is “associated with an artistic engagement with technology that is not necessarily preoccupied with the digital as such, but with life after and in the digital, working across old and new, digital and analog” (Bishop, Gansing, Parikka, 2017: 5). Simultaneously, critical work in media theory has tried to think through a world in which the separation of technological materiality from networked global capitalism and global environmental changes seems impossible to uphold and hence in need of philosophical re-assessment. Within this context, the term ‘post’ signals a temporal and critical distance from the digital, while simultaneously being defined by it. As a concept to move beyond new media dualisms and the fetish-like fascination with technology itself, it seems apt to analyze a phenomenon like handwriting.

The proliferation of Post-internet, the New aesthetic, and Post-digital art practices in the current decade has led to an increasing production of artistic content which investigates or intervenes in everyday digital culture. At the same time, many digital media platforms encourage a kind of curating of one’s own space, so that the aura of curation becomes possible without the curator (Balzer, 2015). The role of the curator in contemporary art has been given increasing attention over the past decades, to such an extent that the curator now rivals the artist for attention (Zammit, 2018). Arguably, Hans Ulrich Obrist is a good example of this tendency, being highly influential and well-known for his work well beyond the inner circles of contemporary art.
Obrist’s digital curatorial project *The Art of Handwriting* was started in 2012 on Instagram and has grown year by year to its current 4,500 posts for 320,000 followers. According to Obrist, the project is aesthetically-driven by a literary dynamic where Instagram is understood along the rule- and limitation-based expression of Oulipo. The social medium is used as a curatorial platform to ‘protest the disappearance of handwriting’. Obrist’s own story of the project’s conception is that he spent a winter holiday with Lebanese-American poet Etel Adnan in France, and as they fled rainfall into a café Adnan started writing short poems in a notebook. At that point, he realized the potential of celebrating handwriting using digital media rather than nostalgically lamenting its disappearance as Umberto Eco, among others, had recently done.

*The Art of Handwriting* thus springs from an insight of the shifting ontology brought about by digital culture, which opens our eyes anew to analogue media like paper and handwriting in terms of aesthetic causality after long having been embedded in our everyday discursive practices. This post-digital logic, that non-digital practices regain interest and undergo a change of their conditions of possibility through the digital, highlights a salient feature of current media ecological transformations. Obrist’s intervention into the media infrastructure of everyday life – using post-its and Instagram – highlight the different materialities by drawing the physical qualities of paper and the haptic movement implied by the hand into the ubiquitous everyday space of visual culture that is Instagram. To a certain extent, the project is also an intervention into the different temporalities of media, juxtaposing the slow and silent post-it note which at the same time mirrors an Instagram post in terms of being ephemeral. The post-it note, however, often only has one or two readers; it rarely travels and is generally discarded after it has done its job of reminding one of some kind of business. Transposed to Instagram as digital object made up of data and metadata, it appears at center stage as a rare reiteration of a lost moment in time when its production took place. Multiplying its readers from one to 320,000, the disposable paper object has become highly visible in an effortless mixing up of digital and physical.

The handwritten notes in Obrist’s digital gallery are often rapidly scribbled down on a post-it note and seem to capture the singularity of thought as it happens. Obrist has
repeatedly referred to the object oriented ontology of Timothy Morton as a source of inspiration for his curatorial practice. In Morton’s conception, art is about causality and what he calls the ‘aesthetic dimension’. If we regard Obrist’s curatorial project of exhibiting handwriting to be to some degree poetic, it is interesting to note the complex argument Morton puts forth about the ontology of poetry not being:

…candy sprinkles on the cupcake of science, nor some ineffable source or power. It is sparkingly apparent yet strange at the same time. It is both root and blossom, essence and appearance, withdrawn yet vivid. Poetry is not mere ornamentation, nor is it some Romantic (or post-Romantic) engagement with (human) ‘meaning’ – as either the public relations guy or the ignored poor relation of an instrumental realm of science and politics…poetry simply is causality, pure and simple (Morton, 2012: 216).

Following Morton, we may consider the post-digital object of Obrist’s handwritten notes posted on Instagram in terms of causality. He maintains that objects are ontologically prior to their relations of time and space and that causality floats in front of them in the aesthetic dimension, which is its Heideggerian un concealment, as discussed in the introduction of this essay. In line with this, the post-it notes are an expression of causality, that this scribble of letters happened in space-time, which is then redistributed to different space-times in the digital milieu and supplied with metadata. It is precisely this causality and contingency of the handwritten note that captures the logic of the post-digital, which is what makes it so interesting to a curator like Obrist.

In Morton’s contribution to Obrist’s Handwriting Project, this ontological complexity is brought forth with self-distance and humor. One post (2017-10-12) from an AI-themed marathon of philosophy at Obrist’s Serpentine Galleries expresses ‘algorithm star sideboard frog/ human railway junction radio/ forehead stone machinery peanut/ Lebanon ice poem AI/ IOU LOVE’. Another post (2014-10-15) states in curly letters ‘Since everything just is what it is Yet is never as it seems. You might as well burst out laughing.’ Other contributions by Icelanders Björk and Olafur Eliasson – who both claim to be inspired by Morton’s philosophy in their artistic practices – point to the cosmic dimension of the project’s ontological poetics. Taken
together, the Icelandic artists express a movement from micro – ‘Handwritten or typed galaxies colliding coexist on axis’ (Björk) – to macro – ‘PUSH THE PLANET’ (Eliasson).

Timothy Morton, algorithm star sideboard frog, human railway junction radio, forehead stone machinery peanut, Lebanon ice poem AI, IOU LOVE. Hans Ulrich Obrist, Instagram.

‘Handwritten or typed galaxies colliding coexist on axis’. Björk, Hans Ulrich Obrist, Instagram

The term ‘curationism’ has been proposed to cover the ‘acceleration of the curatorial impulse to become a dominant way of thinking and being’ (Balzer, 2015) in a moment in time when, as consumerist subjects, we are engaged in a sort of constant
curation of life. It is perhaps fitting then, and very much along the ingenious reinvention for which Obrist has become known, that the leading art curator is not closing himself off in an exclusionist sphere but rather intervenes in the everyday digital culture of Instagram, but with a concept that overthrows the ephemerality of the digital image flow and wishes to protest the disappearance of the medium of handwriting by inserting it into the digital.

‘PUSH THE PLANET’. Olafur Eliasson, Hans Ulrich Obrist, Instagram

**The Handiness of Post-digital Handwriting**

Obrist’s *Handwriting Project* highlights the contingency of post-digital handwriting through the media integration of Instagram and post-it notes. Two seemingly opposed and unrelated everyday media formats are joined so that the paper and ink cuts through the sleek interface of the social medium, creating an aesthetic effect with a fragment of the human within the non-human. Another way of putting it would be to think with Heidegger that the practice of handwriting and the tools of pen and paper have long been ontologically understood as useful things. As Heidegger elaborates in *Being and Time*, an object can be ready-to-hand (*Zubanden*), meaning it is part of everyday practice and reveals itself through its *handiness*.
Heidegger defines handiness as the ‘ontological categorial definition of beings as they are in themselves’ (Heidegger, 2010: 72). When an object like the hammer – Heidegger’s most famous example – brakes, it instead becomes present-at-hand, *Vorhanden* (Heidegger, 2010: 96). As its everyday function is interrupted we can grasp the piece of metal theoretically instead of practically.

Writing tools like pen and paper are typical useful things in a Heideggerian phenomenology. As such, they exist as something in order to do something, in this case usually communication of a certain kind. Over the course of modernity and in tandem with the emergence of various technical media, handwriting became increasingly tied to intimate and personal communication and to the human body. In the 21st century, most of the useful things one would use paper and pen for had been replaced by other, more efficient ways of communicating. The primary device to take their place is the smartphone, which being always connected and available, made the personal message purpose of handwritten notes superfluous, since the message could now always be conveyed independent of space and place. The ontological concepts associated with the media form of personal handwritten notes have, however, not been fully absorbed by these new media. Although the integration of the camera and the digital image as a form of communication along with the rise of emojis seem to operate on a similar logic, it has still not been able to convey the same sense of contingency.

So what happens when the cameras of these smartphones now create digital objects of handwritten notes? Drawing on Heidegger’s understanding of handiness, it becomes possible to assert what the handwritten note is not today: “The ready-to-hand is not grasped theoretically at all, nor is it itself the sort of thing that circumspection takes proximally as a circumspective theme. What is peculiar to what is initially at hand is that it withdraws, so to speak, in its character of handiness in order to be really handy. What everyday dealings are initially busy with is not tools themselves, but the work” (Heidegger, 2010: 70). In order to be really handy the tool must become withdrawn, integrating itself with the hand and the what-for [Wozu] of what is to be produced. In this sense, the smartphone is increasingly developing the quality of handiness, particularly to the digital native generation who never had to shift their tools of communication.
In the post-digital realm, pen and paper have become present-at-hand in Heidegger’s terminology, since they are now less handy and therefore also less withdrawn. As handwritten notes and their corresponding tools of pen and paper were used for everyday communication, they were known in their relational nature as equipment for a purpose, but not as what they were in themselves (Heidegger, 2010: 98). They were habitual media, to borrow Wendy Chun’s useful term to describe how digital media produce habits, ‘things that remain by disappearing from consciousness’ (Chun, 2016: ix). As pen and paper were replaced by smartphones and tablets, they stopped remaining by disappearing and became repurposed as artistic and psychological tools.

One may still use paper notes occasionally to scribble something, but to communicate practical information they are no longer the default medium. Pen, paper and the resulting note have become discernable and therefore deconcealed as Being in the world (Dasein). The scribbled note is also present-at-hand because it is present in our consciousness, and thus possible to exhibit as such. As Chun puts it, ‘our media matter the most when they seem not to matter at all’ (2016: 1); smartphones and search engines being typical examples of thought-structuring technology that is so ubiquitous that it is nearly invisible, as were of course pen and paper a few decades ago. For clarity, the everyday and intimate communication of pen and paper did not really change with the advent of the typewriter, which made its success as the essential tool for writers and official communicators. It was not until the advent of smartphones that pen and paper started to be replaced in this everyday sense. When they stop being a thought structuring technology, they lend themselves to the production of different ontological concepts like intimacy, the haptic, the human and the post-digital contingency outlined here.

The personal and intimate handwriting on paper is re-emerging within a digital infrastructure whose endpoint is often a smartphone resting in a human hand. The smartphone, in contrast, is very much ready-to-hand. This peculiar media ecological cycle from hand to hand as it were, is coming together in the contingency of post-digital handwriting.

Obrist highlights pen and paper by handing them to artists to produce a singular trace of an event, which he casually photographs with his smartphone and uploads to
Instagram. In order to understand this phenomenon, it is worthwhile to stick with Heidegger in inquiring about the act of communication of the tool and its being as a digital object. I am not concerned here with issues of authenticity or aura as it has been analyzed repeatedly since Walter Benjamin’s artwork essay, because the present questions are of a different ontological order. For Heidegger, communication is about seeing together, and this holds true for mediated communication as well, since that which is seen does not necessarily have to be present and within reach:

It is letting someone see with us what has been pointed out in its definite character. Letting someone see with us shares with others the being pointed out in its definiteness. What is ‘shared’ is the being toward \( \text{Sein zum} \) that which has been pointed out, it is a way of seeing something as in common. We must keep in mind that this being-toward is being-in-the-world, namely, in the world from which what is pointed out is encountered (Heidegger, 2010: 155).

Following Heidegger, we can see how Obrist’s posting of handwritten notes on Instagram constitutes a shared being toward that which is pointed out. It is thus not a matter of reproduction but orientation of being. Through Heidegger, we can thicken the description of the digital object beyond its status as code and system to incorporate user experience and relationality (Hui, 2016). The unconcealment of the useful thing reveals its social and cultural relation to us. Yuk Hui suggests that by incorporating things like interface design which allows user participation, metadata description beyond the merely technical and an emphasis on ‘the relation of the thing to others, which is not only spatial but also temporal and social’ (Hui, 2012: 349), we may arrive at a better and more pertinent understanding of a digital object in its digital milieu.

Coming back to Obrist’s *The Art of Handwriting*, we can see how the post-digital effect is dependent on the conceptual juxtaposition of the imperfection of the work of the human hand and the smooth and filtered mimesis of life on Instagram. These qualities are experience-based and tied to the metadata through the geotagging of the image and date, time and place of posting, but also and more importantly through the 320,000 followers that interact with and participate in this unconcealment of the useful thing that is a handwritten post-it note. In the circulation on social media of
images of Donald Trump’s acts of handwriting we are instead witnessing how the pen strokes are socialized as digital objects through the relation and interaction they produce.

The practice of post-digital handwriting can thus be related to unconcealment of the tools of communication (pen and paper) through the collapse of their handiness and their consequential appearance as theoretically graspable and present-at-hand. The digital objects are not constituted by the image per se, but by the social, cultural and temporal relations they produce. The particular case of handwriting as a post-digital phenomenon relates to other cases like vinyl, typewriter or cassette in that it is not an abandonment of the digital for the analogue but rather a media ecological feedback loop where the physical medium of the handwritten note is highlighted when captured as a digital image using a smartphone and distributed online on social media platforms, which alters the temporality of both media and draws attention to their respective ontological status.

In a digital milieu, handwriting assumes new qualities which radically change its ontological status. This process can firstly be related to how the text of handwriting changes from being primarily semantic to being primarily visual. The message becomes subordinated to the strokes of pen and their associations with a human being. Contrasting all surrounding typed text with the free haptic movement of the hand over paper, post-digital handwriting becomes a highly aestheticized phenomenon. These aspects are all captured in Obrist’s ever expanding art gallery, the Art of Handwriting, on his Instagram account. Secondly, the digital object of handwriting produces new cultural and social relations. The reach of the medium is changed from one reader to an infinite number of users who will produce new networked relations through the image. In the end, handwriting in digital milieus is a striking case of the dynamic and complex conflation of the human and the non-human in media and cultural techniques.

References


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A Promethean Philosophy of External Technologies, Empiricism, & the Concept: Second-Order Cybernetics, Deep Learning, and Predictive Processing

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Abstract

Beginning with a survey of the shortcoming of theories of organology/media-as-externalization of mind/body—a philosophical-anthropological tradition that stretches from Plato through Ernst Kapp and finds its contemporary proponent in Bernard Stiegler—I propose that the phenomenological treatment of media as an outpouching and extension of mind qua intentionality is not sufficient to counter the ‘black-box’ mystification of today’s deep learning’s algorithms. Focusing on a close study of Simondon’s On the Existence of Technical Objects and Individuation, I argue that the process-philosophical work of Gilbert Simondon, with its critique of Norbert Wiener’s first-order cybernetics, offers a precursor to the conception of second-order cybernetics (as endorsed by Francisco Varela, Humberto Maturana, and Ricardo B. Uribe) and, specifically, its autopoietic treatment of information. It has been argued by those such as Frank Pasquale that neuro-inferential deep learning systems premised on predictive patterning, such as AlphaGo Zero, have a veiled logic and, thus, are ‘black boxes’. In detailing a philosophical-historical approach to demystify predictive patterning/processing and the logic of such deep learning algorithms, this paper attempts to shine a light on such systems and their inner workings à la Simondon.

Keywords

deep learning; externalization; Simondon; Carnap; second-order cybernetics; Predictive Processing
This article was penned shortly before Bernard Stiegler passed and was constructed after a series of exchanges between myself and Stiegler. Although the article seeks to problematize some of Stiegler’s thought regarding the philosophy of technology, specifically in regards to his theorizing neural networks and deep learning, I ought to underscore that Stiegler was a mentor and friend who always encouraged my debating and challenging his work. Thus, this article is dedicated to the life and memory of Bernard.

**Introduction: Media as Externalization**

The philosopher of media Bernard Stiegler is one of the most recent thinkers to propose that media objects are the externalization of something more primal and transcendental, whether it be intention, language, or cognition. Stiegler considers that the implications of the Promethean program, where collective self-mastery and active participation are imbricated within the remaking of mankind in the world, has become exacerbated in the era of digital technologies and networks. Stiegler’s normatively negative position—violently poised against the possibility of a transhumanist telos of further enlightenment—is perhaps what distinguishes him most from the philosophical genealogy of technicity. Before proceeding with a critique of Stiegler, however, we must first contextualize that his thought does not exist in a vacuum and that his is only the most recent instantiation within a rich history of philosophical anthropology and the philosophy of technology that sees the human as a ‘not-yet-finished’ creature capable of developing itself by way of self-constituting prostheses—linguistic/semantic and technological—artificializing its environment and automating its ecology. Russian philosopher Nikolai Fedorov, an early champion of radical life extension and a precursor of transhumanism, identified this same deficiency as what moors mankind to the creative drive, the impetus to explore foreign lands and celestial spaces with the index of domination in mind. Musing on the history of human invention and *reinvention*, Fedorov remarks that:

> the spread of humanity over the planet was accompanied by the creation of new (artificial) organs and coverings. The purpose of humanity is to change all that is natural, a free gift of nature, into what is created by work. Outer space, expansion beyond the limits of the planet, demands precisely such radical change. The great feat of courage now confronting humanity requires the highest martial virtues such as daring and self-
sacrifice, while excluding that which is most horrible in war—taking the lives of people like oneself (Fedorov, 1990: 96).

For Fedorov, this ‘underdetermination’ of overspecialization, the Promethean anthropological-philosophical treatise, grants a level of behavioral leeway and cognitive lability to mankind.¹ On one hand, Stiegler follows from this tradition, for he sees such invention as inexorable from the human project but, on the other hand, Stiegler also argues that there are catastrophic implications riddling its most recent actualization in the realm of ‘the digital’ (or what he calls ‘digital tertiary retentions’). For Stiegler, digital reinvention is steeped with the phenomenological erasure of creative technical activity, where technē is no longer the project of human rationality² but the engine of positive feedback loops that overdetermine and undercut creativity, forecasting mankind’s future into anomie and isolation. Such is the murmur of Stiegler’s techno-pessimism.³

Stiegler’s fatalistic treatment thus recalls what Friedrich Kittler perhaps all too dismissively denounced as the ‘old thesis’ of media—the understanding of media artefacts as extensions of human systems/organs.⁴ Yet this ‘old thesis’ is not merely relegated to media theorists such as Stiegler nor obscure transhumanist thinkers such as Fedorov. In fact, it finds its philosophical roots in the birth of philosophy, which arguably spouts forth from the consideration of the human organism as the inheritor of lack: a remainder that is underdetermined, underspecialized, and underdeveloped physiologically and adaptively.⁵ This ‘lack’, the posthumanism that haunts the human project, is precisely what innumerable philosophers have argued motivates mankind’s invention of artificial technologies, artefacts, and languages, systematizing a recursive scaffolding of self-reference and development.

This rendering has a long lineage beginning with Plato’s Meno. In the Meno, Socrates insists that one can know nothing of virtue intrinsically and that knowledge transpires dialectically, a byproduct of dialogue and interrogation vis-à-vis sociability and deduction. For Socrates, knowledge is an offspring of the nature of virtue revealing itself. Consequently, Socrates calls upon an uneducated slave from Meno’s retinue, querying whether this boy knows how to calculate the double of the area of a square. As the boy draws a square in the sand, followed by diagonal lines, Socrates claims that the slave ‘spontaneously’ recovers the solution to this problem.
Exteriorizing the calculation, technesis involves the synthesis of the hypomnesic inscription within the inorganic domain (the sand), which results in the recursive logic of recollection—mechanical reproduction invites knowledge into a dance with artificially reconstructed memory. Socrates, noting how knowledge springs forth from the inscribed calculation concludes by noting:

Meno, can you see where our friend here has got to on his journey towards recollection? At first, he didn’t know which line would produce the figure with an area of 8 square feet—just as he doesn’t yet know the answer now either; but he still thought he knew the answer then, and he was answering confidently, as if he had knowledge. He didn’t think he was stuck before, but now he appreciates that he is stuck and he also doesn’t think he knows what in fact he doesn’t know (Waterfield, 2005: 84a-84b, 120).

The Socratic elenchus here asserts that the correct process of questioning (by oneself or an external agent) elicits the recollection of relevant truths and is markedly dialectical—that is, despite the fact that it is Socrates who proposes the definitions or ideas for discourse, he does not examine them or grant them truth-value until he gains a measure of agreement from his interlocutor (in this case the slave-boy and Meno). In the Meno, this process is synthesized by way of the inscribed formula, finding its nexus in artefaction. The formulation of artefaction, as the offspring of a dialectical intellectual process, is normatively positive—occupying the space of calculation-cum-inscription, that provides for recollection of that which was dormant: knowledge, which becomes prosthetic. The Hegelian philosopher of technology Ernst Kapp (1808-1896) called this process ‘organ-projection’, German anthropologist Paul Altsberg (1883-1965) termed it ‘body-liberation’, mathematician Alfred J. Lotka (1880-1949) deemed it ‘exosomatic evolution’, and André Leroi-Gourhan (1911-1986) called it ‘exteriorization’. Despite the various verbiage, the central principle remains the same: the human and its function(s) becomes delaminated from any particularized specializations and adaptations, such that mankind configures an existence for itself by way of inventing technologies. In doing so, mankind externalizes its bodily functions, automating its means of survival by way of artificializing its environment so as to supplement its biotic deficiency.
For the sake of this paper, we will focus on the recursive logic at play here, and thus limit ourselves to two strands of thought: dialectical and non-dialectical. The first camp ensnares a collective of dialectically-minded philosophers, who—reaffirming the humanist Hegelian project of the *Dasein of Geist* as progressing via an asymptotic telos—imply that technological evolution is necessarily carved around lines of succession, wherein ‘technological progression’ finds itself always countered by the intervention of negativity. In addition to Kapp, Alsberg, Lotka, and Leroi-Gourhan this genealogy includes Alfred Espinas (1844-1922), Georges Canguilhem (1904-1995), Arnold Gehlen (1904-1976), Heinrich Popitz (1925-2002), Raymond Ruyer (1902-1987), Bernard Stiegler (1952-2020), and Marc Azéma (b. 1967), many of whom are often regarded as philosophers of ‘organology’. Before more closely examining the Hegelian core of this project, let us clarify what, exactly, being a thinker of organology entails, as it invokes a particular conception of reflective thought that recalls a central pillar of the first-order cybernetics of Wiener, McCulloch, and Shannon: positive feedback within a closed system. This is an important schema to keep in play as we review the Hegelian notion of self-externalization.

**Organology**

‗Organology‘, as a philosophical system, concerns itself with how recursive forms occur in nature and, thus, has an inherent ecological penchant. It invokes an epistemological and differential rendering of synthetic division—that which is inorganic is differentiated from that which is organic, such that one can direct the reflective judgment towards the object of thought, deracinating consciousness from the object of consciousness. Organology is a synthetic thought ‘that not only integrates but also searches for a new epistemology that creates a new loop’ (Hui, 2019: 25). As evidenced by the 1947 paper ‘Machine and Organism’, Canguilhem was the first thinker to use the term ‘organology’; in refusing the mechanist purview, Canguilhem purposed this term in order to consider the relation between organism and machine within a dialectical purview while reverting the Cartesian epistemology (of mechanizing life). Where, according to Descartes, the body and its movements are governed by mechanical rules, for Canguilhem they are governed by something
far more fundamental and primary—an exigent vitalism that is always translated by way of representeds. Canguilhem rejected the parallelism between organisms and machines—organisms are not necessarily adaptive and, thus, can display pathological behaviors; machines (specifically, Canguilhem seems to have had the automata of first-order cybernetics in mind) on the other hand, are guided by a telos—fixed pre-programmed goals. Where organisms are able to self-organize and self-repair, machines cannot repurpose their goals, programs, or directives; Canguilhem remarks that ‘[i]t can easily be said that there is more purpose in the machine than in the organism, because the purpose of the machine is rigid, univocal, univalent. A machine cannot replace another machine’ (2008: 89). Although this was not necessarily the case, as Norbert Wiener’s work on homeostasis and adaptive response was formulated around the concepts of emergency, error, and shock (modelled around Walter Bradford Cannon’s work on fight-or-flight response), for Canguilhem—and the philosophy of organology thereafter—science and technology are understood to be circular, with the body and its nomological laws reinforcing something more primary: life. This gives a clue as to why, exactly, Canguilhem’s ‘organology’, and, in turn, the project of organology writ large is dialectical. Rather than constituting a supersensible world, the nomological laws of nature are understood as making explicit something that is implicit already in ordinary empirical descriptions of how things are.

Canguilhem’s rethinking does not reduce the machine as the equivalent of the human but, instead, conceives of the human-machine as an organic whole, set into dialectical motion. Canguilhem’s conception was inspired by many other thinkers, including Kurt Goldstein and his theory of holism, the exteriorization theory of Leroi-Gourhan, and Kapp’s organprojektion. Organology finds its most markedly Hegelian articulation with Kapp, who coined the phrase ‘philosophy of technology’ in 1877. Kapp was a Hegelian philosopher true and true, whose work sought to demonstrate technics as the synthesized projection of organs, tools understood as biophysical hardware, with the ineluctable human canalizing itself by way of its technology. For Kapp such tools mechanically reconstruct organic form, serving as indices of morphological residue. As a Hegelian, Kapp’s image of thought finds the human (and the human project) reasserting its primacy, entailed in dialectical becoming. Kapp’s understanding of the tool illustrates the Hegelian core of media-as-
externalization, wherefore the universal and singular forms are entangled in totality, each containing the determination of the other within it and, thus, the two are wrapped into absolutely one totality, their oneness the diremption of itself in the free reflective shine of this duality. Having now reviewed organology, let us now implore this Hegelian core.

**Spirit, the Rational Object, and Definite Conception**

In Hegel’s *Phenomenology of Spirit* (1807), the notion ‘alienation’ is moored to two German terms that Hegel utilizes: ‘Entfremdung’ and ‘Entäusserrung’. Although both have often been translated as ‘alienation’, in parsing this heteronomy with a sharpened conceptual scalpel at hand we ought to note that ‘Entfremdung’ more closely refers to *estrangement* as the process or state whereby consciousness is separated from one or more of the aspects required for consciousness to fully understand itself. ‘Entäusserrung’, on the other hand, is the process where consciousness externalizes itself in an objectified form and, by way of the object, develops a more adequate understanding of itself. The former is linked to *alienation* and the latter *artefaction*, as (self)-externalization is the way consciousness learns that it is not purely a subject and has an ontological structure that not only incorporates a relation to objectivity but depends on this relation. In turn, consciousness is purposed and re-purposed, deracinated from the subject as it is distributed among a community in the form of concrete content—instrumentalized vide the form of work and the objects of labor. Thinking, the profoundest aspect of Spirit with its highest activity being to comprehend itself, unspools by way of its operations, which direct themselves towards determinate activity, the aims of finitude. Thus, we see how cognitive activity is directed not towards *interiority* but a determinate actuality. For Hegel, the nature of Spirit must particularize itself to become true and this is achieved by way of movement towards externalization: “consciousness is essentially this process—not a remaining static in the immediate natural state but a passage through a process in which what is eternal or true, as its essence, becomes its object or purpose” (Hegel, 1990: 21).

For Hegel, the activity of object-ification transfers and converts *empty objectivity* into a manifestation of being in-and-for itself, i.e., self-determination. For “[a]s soon as the
universal is externalised, it takes on a particular character. In isolation, the inward dimension of the Idea would remain a lifeless abstraction, and it is only by means of activity that it acquires real existence” (Hegel, 1975: 79). Spirit abandons its original condition and discovers itself through what it performs, translating inner essence into reality by way of externalizing the universal concept and, thus, attaining a ‘real’ existence. For Hegel customs, laws, institutions, and symbols of ancient nations were vessels of speculative ideas and products of Spirit but the true fruit of Spirit never comes first; the speculative Idea is externalized, it is always the manifestation point of rationality upon worldly existence, where the potentiality in consciousness, volition, and action finds itself inorganically excised through its determinate object. Spirit, for Hegel, is not abstract, because “it is consciousness, but it is also the object of consciousness—for it is in the nature of the spirit to have itself as its object. The spirit, then, is capable of thought, and its thought is that of a being which itself exists, and which thinks that it exists” (Hegel, 1990: 45)

Ray Brassier, in a recent conference chaired by Paul B. Preciado titled “The Parliament of Bodies: Communism will be the collective management of alienation” asks whether this heteronomy between ‘Entfremdung’ and ‘Entäußerung’ implies synonymy? Spirit’s self-externalization—that is, collective self-consciousness’ self-externalization—is undoubtedly constitutive, but there is a marked difference between how Spirit realizes its freedom and those ways by which it becomes bound or subjected to a foreign agency or power, which is only, itself, an alienated or estranged form. That is, following Brassier’s account, all estrangement is externalization but not all externalization is estrangement. Drawing from Adorno’s reading of Hegel, Brassier proffers that this account evidences the dialectical interplay between Spirit’s independence and dependence, wherefore Spirit frees itself form its subject to nature, achieving spiritual independence/autonomy, and in doing so moves towards culture as a kind of “second nature” to which it then becomes subjected. It becomes dependent on societal institutions, customs, and norms in a manner by which Spirit’s freedom is significantly diminished. At once, naturalness or instinct is replicated within Spirit, manifesting within it in an estranged form while, institutions, customs, and norms begin to function as if they were nature. The anthropologist Arnold Gehlen would later similarly refer to reified second nature but by way of mankind’s deficiency, using the term “ersatz organs” when describing technologies and
institutions alike, with both of them compensating for the unfinished or lacking human; nonetheless, in both accounts in furnishing institutions qua norms culture becomes man’s “second nature.”

Accordingly, for Hegel every self-consciousness denaturalization engenders an unconscious re-naturalization, repressing Spirit. First there is subjection to necessity and then emancipation by way of generating another form of subjection. As Ludwig Feuerbach, a key disciple of Hegel, remarks: “Man—this is the mystery of religion—projects his being into objectivity, and then again makes himself an object to this projected image of himself thus converted into a subject; he thinks of himself as an object to himself, but as the object of an object, of another being than himself” (Feuerbach [1841] 2008: 181).

Objectification thus yields the object to which the object-ifier is objectified internally. This is the processual movement of alienation as double-objectification in Feuerbach and the young Marx. A naturalized scenography divulges itself where humans are necessarily self-externalizing, i.e., producers by nature. The termination of subjection is not the reinstatement of interiority—externalization is not the externalization of a pre-existing originary substance or the index of a vital source but, rather, a constant process of amendment, with this process generated because of the constituent non-identity of humans as self-transforming producers. Given this picture of Spirit, we are encouraged to see self-externalization as resulting in either a state that is alienated or un-alienated depending on the circumstances in question. Stiegler, however, collapses all norms and exercises of freedom into alienation by way of mechanical compulsion, such that we cannot measure the discrepancy between realized and unrealized collective human freedom, for our metaphysical collective Spirit is always being outpouched by way of a processual unfolding.

Recall how, in the Science of Logic ([1816] 2010), the universal and singular form totality, the concept passing into concrete existence which is, itself, free and is none other than the ‘I’ or pure self-consciousness. The ‘I’ is the pure concept itself, the concept that has come into determinate existence and finds itself instantiated into all manmade hardware. In Philosophy of Nature ([1830] 1970), Hegel constructs concepts that define Being by way of a tripartite model—the mechanical, the chemical, and the organic—demonstrating that these are instantiated into our productive experience of
the world in equal part, with the living body sustaining this ‘contradiction’ (Hegel, 1970: 10).\textsuperscript{20} For Kapp, Hegelian production as such is conceptually compounded into machine- or tool-construction and machine- or tool-use, with this ‘contradiction’ elaborated upon by way of technical objects (which exteriorize, or ‘project’ the organs of the body). Via Absolute Spirit, the eternal idea in and of itself keeps itself concentrated and reproduced, continually regenerating itself and enjoying its eternal status.\textsuperscript{21} By demonstrating an inner affinity between the constructed tool and the human organ, Kapp’s notion of \textit{organprojektion} (‘organ projection’) facilitates a constructive affinity that is drive-based, as artefactual technesis results in the human being’s made partial, or divided, such that the artefact serves as a means of reproduction. While contemporary Hegelians such as Robert Brandom take an interest in how language’s reproduction is equipollent to mankind’s sapience, Kapp designates technical objects as similarly primordial and biological—for Kapp, the human impulse to manufacture tools and machines is steeped in the well of cognitive activity from which language is drawn, with tool-construction similarly understood as reproductive activity fettered to reason and knowledge-production. With the organ-cum-tool or -machine now partially separable from the entirety of Being, mankind’s Being is \textit{defined and derived} through the attributes, usage, and complexity of practicability.

Kapp’s cyclic and augmentive-physiognomic description of artefactation reveals his Hegelian plexus, with the ontological paradox of dialectical historicity as premised on an open Whole that is irremediably ruptured by its own absolute negativity. However, as the aforementioned description makes clear, his understanding of technical objects is normatively positive, with tools archiving consciousness. Another dialectical philosopher of organology, Raymond Ruyer, reserves consciousness as a kind of ‘absolute’ form with non-localizable zones of indetermination. According to Ruyer, animal species produce phenotypically externalized technologies—‘spiders weave webs, beavers build dams, birds construct nests’ (Smith, 2017: 121). In contrast to animals, humans engage in the quasi-finalist endeavor of fabricating technical artefacts. Here, Ruyer recollects Kapp’s morphologically-directed and evolutionary understanding of artefactation—the ‘hammer externalizes the forearm and fist in wood and iron; clothing externalizes the skin; a baby’s bottle externalizes the mother’s breast; a kitchen stove externalizes the stomach; and so on’ (Smith,
2017: 121). Directly citing Leroi-Gourhan’s work while simultaneously calling to mind Kapp, Ruyer also notes that our ‘externalized organs’ become detachable, removable and disparate from our body—therefore, our ‘bodily organs’ are, themselves, uniquely technical artefacts.

With Canguilhem, Kapp, and Ruyer, Being has its foundation in the question of eternal metahistorical identification, which begins with the Absolute Idealism of Hegel’s teleological arrow but is further continued by the account of post-mechanist natural science, where Being is explicitly related to self-hood and presupposes ‘a whole of which subjects and objects are parts’ (Hölderlin, 1988: 124-126). Given form by the reflective judgment, which imposes limit conditions upon cognition’s freedom, Being materializes and internal emergence is extended through technologies. However, none of these aforementioned thinkers of organology were alive to speak of digitally embedded and networked technologies; Stiegler remains heir to organology, although he wields the throne as a pessimist of necessitarian alienation, collapsing techness writ large.

Alienated and unalienated states do have a place of distinction for Hegel, however. Hegel’s insistence on phenomenological immanence amounts to the claim that we cannot arbitrarily create a criterion of unalienated Spirit based on what our current historical conception of what freedom is and, in turn, rules out any appeal or reference to an unalienated originary state. Thus, there is no such originary unalienated state, it is the stuff of mythology. This is the critical constraint of historical immanence, such that any differential criterion must be internal and immanent to the shape of self-consciousness that is held under consideration. The problem is that the historical sequence is not empirically given, so we do not have access to it by way of our perceptual history. For Hegel, try as we will, we cannot get at alienation by threading historical facts together into a progressing narrative that unfolds from past to present. Deliberately and self-consciously constructing the retrospective preconditions for our current self-conception as free or unalienated is a matter of retrogressing to a previous unfreedom or alienation (in order to then discern our current measure of freedom or unalienation). As Brassier says, “it entails that we are never in complete possession of the resources through which we confidently distinguish between alienating and non-alienating automatisms among contemporary
custums, institutions, or norms” (2020). The processual model of alienation reifies the moments in what is, for Hegel, an indivisible movement, where compulsion and freedom coincide. Estrangement cannot be the return of repression within spirit so long as this return is understood as the reiteration of a proceeding state and we are never in complete possession of the resources through which we could confidently distinguish between normatively positive and negative automatisms (as well as the technologies underpinning them). To acquire such resources we must retrospectively reconstruct the indivisible movement between what coincides, and this is but an impossible task. Estrangement and de-estragement, compulsion and freedom, coincide for Hegel such that estrangement is not a repetition of compulsion within the attempt to undo compulsion so long as this repetition is understood as the reiteration of an initial or preceding state. Alienation proper, in both Marx and Hegel, is externalization as de-estrangent-cum-estrangement; the prospect of an unalienated state emerges by retrospection and, as a consequence, there can be no narrative about overcoming the need to overcome so long as self-externalization is compelled by the need to dominate external nature. Alienation will always generate a surplus of estrangement, a series of compulsive automatisms that prevent us from realizing our freedom.22 As such, we are necessarily directed towards constructing our machines—it is how we concede to Spirit, convincing Spirit of rationality’s vim. In order to create an incision to solve the two unique problems that emerge here, the problem of phenomenological immanence (with Hegel) vs. the problem of naturalized metaphysical lossage (with Stiegler) we will eventually take a more systems-theory oriented approach that emphasizes how homeostasis and autopoiesis figure into the introduction of novelty, where any system’s equilibrium is directed by way of technical objects and their entanglements. First, however, let us more exactingly scrutinize Stiegler.

Stiegler’s Fatalism and Digital Media Artefacts

Is Stiegler’s program truly one of Prometheanism? If Prometheanism is the rejection of predetermined limits on action and self-transformation, then the parallel between rationalism and Prometheanism suggests that if action is constrained by thought and self-transformation is constrained by self-understanding, then the rejection on limits
on one entails the rejection of limiting the other (Brassier, 2014). That is, Prometheanism proposes that all reasons are ‘artificial’ and reject limits on artificialization, enjoining the wholesale reengineering of intelligence to our technologically embedded ecology according to a more rational program of self-invention than Stiegler’s prescription of quasi-theological limits to artificialization.

Kapp sparsely appears in Stiegler’s pages as a direct source and Canguilhem even less so. Nonetheless, for Stiegler, as was the case for Kapp and Canguilhem, tools are imbricated in habitus. For Stiegler the relationship between tool and cognition is reflexive: ‘[t]he interior is constituted in exteriorization’ (1998: 141), such that the tool (re)invents the human just as much as the human invents its tools. Stiegler’s conception of Being recalls Hegel by way of its plasticity: Being here is progressive not only in the sense that information, as it is exteriorized beginning with early lithic technologies, accompanies hominid evolution but also in how media are related to neural development. Thus, Stiegler’s engagement with externalization, like his predecessors, is preoccupied with registers of cognition. For Stiegler, like the flint tool, tools of writing are understood as epiphyllogenetic vectors that advance corticalization; although stone tools were not crafted with the intention of storing memory, for Stiegler they inadvertently do so, inciting a series of learned motor actions (e.g., flexing the elbow in the act of using a hammer). Despite retrofitting Kapp and company’s conception of media-as-externalization, however, Stiegler’s sociological argument re: technics elicits an admixture of Derridean ontology with Husserlian phenomenology, where the externalization of technology imbricates mind and intention through successive feedback loops. Consider, for instance, how for Stiegler the true advent of externalized memory (‘mnemotechnics’) finds its pinnacle with the invention of writing and demarcation; according to Stiegler, writing stabilizes language (vis-à-vis time-consciousness) in both the brain and the discursive world. Unlike writing, however, Stiegler regards those digital technologies that store memory, such as smart-phones and tablets, as software agents that deprive the user’s freedom, making choices for the user in advance (Stiegler & Rouvroy, 2016). For Stiegler, with analog media after writing, but especially with digital media, we see not only the exteriorization of intention, mind, and memory but also its loss—instead of expanding the capacities of the human mind and brain, a loss occurs, outsourcing the mind without emancipating the human agent. If we are to take Stiegler at his word,
digital artefactation’s relationship with technē ought to be understood as normatively negative, as it results in the deprivation of human agency (what Stiegler terms ‘noesis’) and alienation:

This exteriorization that constitutes the principle of ‘liberation’ is always also an ‘alienation’: it leads to an offsetting of neganthropic possibilities to exosomatized organs that amounts to a kind of dependence, which is the basis of proletarianization as the loss of knowledge (of how to live, work, and conceptualize), that is, as entropy. This is nothing new (Stiegler, 2019: 50).

In a recently translated book, *The Age of Disruption* (2019), Stiegler makes it his mission to:

…show, by combining Foucault’s analysis with that of Sloterdijk, that what the latter describes as a process of disinhibition is made possible by the tensions and contradictions that occur over the course of the successive doubly epokhal redoublings that unfold from the late Middle Ages to the Renaissance, the classical age, the first industrial revolution, the advent of Taylorism (which is also the advent of consumerism, the culture industry, and marketing), and, finally digital technology—agent of the contemporary disruption (ibid., 111).

*The Age of Disruption* is only the most recent articulation of this project, but since it is the most recently translated into English, it includes the most novel references to digital technologies, including GPS vehicle tracking systems and smart watches. While references to actual technologies are sparse, it seems that Stiegler has no laudatory words for recent developments such as fitness wearables and location tracking apps that harvest data and metadata, or which engage in social media sharing and life-logging infrastructure. For Stiegler, these technologies are far from the positive self-archivization or self-curation of labor that those such as Gordon Bell and Jim Gemmell identify with becoming ‘the librarian archivist, cartographer, and curator of your life’ (2009: 5); for Stiegler such embedded wearables further disembody one’s autonomy by way of pushing us into an objectified mass, each of us becoming an unwitting member of the cognitariat.
Mark B.N. Hansen’s critique of Stiegler takes his normatively negative positioning of phenomenology as its object. For Hansen, Stiegler’s phenomenological system is tunnel-visioned; Hansen’s project takes issue with this picture of consciousness that undermines what also makes networks and microtemporal digital devices useful— their possibility of shaping the future by way of honing in on the operational present (in a way that we, deprived of digital technologies, are restrained from accessing).

Unlike Stiegler, Hansen sees digital media as also engaged in the channeling of agency, and thus understands the ‘causal efficacy’ of digital media as normatively positive (2015: 197). For Hansen, twenty-first century media in particular can enhance our cognitive, perceptual, and sensory agency precisely because they put us into functional cooperation with other cognitive, perceptual, and sensory agents that not only follow protocols of their own, but that, most crucially, operate environmentally—‘independently of and autonomously from our directly experienced, conscious agency’ (ibid., 183).

Hansen’s critique primarily cites Deleuze’s machine ontology and Whitehead’s process philosophical system to account for that which Stiegler’s occludes. From Deleuze, Hansen recuperates how ‘media might impact experience without being channeled through delimited, higher-order processes’, thus understanding media as ends in themselves (36). From Whitehead, Hansen reconceives of how perceptions can be understood from within the material universe where causality reigns, moving beyond a strictly perception-centered account to one where perceptions are, themselves, caused by the very same kind of shift that causes all events in the universe’s becoming (48). Moving through causal processes in cyclic fashion, Hansen, too, is a thinker of dialectical organology, using Deleuze and Whitehead’s process philosophy to understand the non-perceptual world through the aperture of perception.26

Another feature of Hansen’s project is his conception of ‘feed-forward’ systems, which presents propensity as causally directed by future efficacy, such that continuous data-gathering, microcomputational processing and predictive analytics make a new episteme possible. According to Hansen, our contemporary conception of technē must be understood as an ‘enveloping of virtualities offered to the body, which constitutes the fundamental anchor point for present and future technological
evolutions, and which induces an automatized and fluid relation to the milieu’ (Hansen in Grusin, 2010: 117-118). Consequently, Hansen’s resolutely speculative ontologising of predictive processing is predicated on an ecological functor of equipossibility and the independence of outcomes.

According to Hansen, Stiegler’s conception of technicity does not properly apply to today’s enactive field of predictive calculation. That is, Stiegler’s model of time-consciousness and anticipation (what Stiegler calls ‘protension’) operates in relation to a static source of inert possibilities. Hansen remarks that predictive probabilities, on the other hand, do not project past data into the future but *generatively integrate present data*:

> [w]hatever else it betokens, twenty-first-century media centrally involve a massive expansion in, as well as a fundamental differentiation—a ‘heterogenesis’—of, the interface between human being and sensory environment. Consciousness’s Being […] becomes, in and through the operationality of twenty-first-century media, a functional […] processual, relationship. With this functionalisation, moreover, the relationship between aboutness and being, between data as access to sensibility and data as sensibility, undergoes a certain reconceptualisation through its anchoring in temporalisation: aboutness is linked to being in an incessant oscillation, where each act of access onto sensibility creates a new unit of sensibility that itself calls forth a new act of access that creates a new unit of sensibility’ (Hansen, 2015: 17).

Hansen is, effectively, interested in the ‘becoming’ of homeostatic systems that self-regulate, a becoming that Stiegler reduces to an ellipsis of lossage, a telos of asymptotic reduction whereby creativity, potential, and freedom find themselves overturned to disruption and anomie (Stiegler: 2019). In addition to Hansen’s critique, however, and perhaps more detrimentally—particularly when we consider how Stiegler conflates the conditions for genesis of language with the conditions of its reproduction when he writes about linguistic systems—we can remark that Stiegler *negotiates metaphysics from within*. There is no distinction in terms of complexity between the analog and the digital, just an arbitrary line between that which is fundamentally tethered to organic existence and preternatural existence, which is
negatively determined. That is, Stiegler produces a quasi-materialist ontology that positively addresses the Hegelian Objective Spirit as the inscription of object-ified knowledge, according to which ‘objectified knowledge is the consequence of the epiphylogenetic formation that arose in life with the practical activity of human beings’ (Stiegler, 2020: 179). Yet Stiegler’s explanatory ontologization of grammatization is akin to a half-formed functionalism that engages solely on the level of empirical content—it characterizes a system as functional in nature by treating its function in terms of stimulus-response dispositions. In short, Stiegler does not differentiate conceptual activity from non-conceptual activity. For the early Hegelian theorists of externalization/projection, the Dasein of Geist supervened upon ontogenesis but, for Stiegler, there is no differential identity of acquisition.

Simondon and Constructivist Cybernetics: On Second-Order Systems

How, then, can we extract a philosophy of differential media without reducing the objects of mediation to (externalized) appearances? Hansen is, indeed, correct to point out that what Stiegler elides is a process-philosophical understanding of causality. Instead of Deleuze or Whitehead, however, I propose a return to Simondon—specifically, that which Stiegler misses in Simondon. Stiegler is, as I seek to demonstrate, a crude reader of Simondon and in some sense a traitor to Simondon. First of all, Simondon is utterly opposed to Heidegger, as Simondon actively dismisses the study of technical objects in terms of the relations that can be established with them. Simondon’s project is marked by a sociological stripe: to reclaim technical operations from the teeth of (Capitalist) work and prod forth specialization and a place for a philosophy of technics, which is markedly scientific. This means separating technical activity and knowledge from the doctrine of work, Capital, and the criterion of productivity by encouraging a relationship between man and technical objects where one is not only the owner of their machines and means of productions but imbricated in their maintenance, adjustment, engineering, knowledge, and further invention.
Simondon offers a unique stripe of process philosophy of the ‘transindividual’, which Stiegler refers to in name only but does not make conceptually central to his system. Deleuze’s machine ontology, at least as it treats ‘actualization’ (the co-determination between beings and technical artefacts), is tethered to Simondon so rather than jumping to Deleuze in order to analyze today’s digital protocols, my study—which agrees with Hansen that process philosophy has immense instrumental value to understand ‘feedforward systems’—turns to Simondon. First of all, what distinguishes Simondon from the previous dialectical thinkers of organology is that Simondon is a thinker of genesis above all else. This is why he will serve as a valuable resource when we consider the roots of deep learning’s algorithmic infrastructure given case studies such as AlphaGo Zero, which has been admired by philosophers and technicians alike due to how it generates inventive winning moves that even master players such as Lee Sedol and Ke Jie could not predict (e.g., the infamous ‘move 37’).

Furthermore, Simondon’s philosophical program is non-dialectical. This also sets him aside from the aforementioned Hegelian genealogy. For Simondon, genesis’ role is to deal with something that dialectics elides, as Simondon’s conception of individuation does not correspond to the appearance of the negative. Rather, Simondon considers the role of genesis as something immanent to conceptual negativity; Simondon, as a thinker of the existence of potentials, is primarily preoccupied with the cause of incompatibility and the non-stability of pre-individual genesis—that which precedes the genesis of an object. Given his penchant for complex systems, we will also make the case for Simondon as a thinker of second-order cybernetics (the conceptual predecessor to deep learning’s logic of predictive inference). Alongside genesis, Simondon is concerned with transductive relations: how subjects and objects engage in mutual structuration such that identity is metastable (much like second order cybernetics and W. Ross Ashby’s conception of allostatic behavior). Unlike Hegel, for Simondon the negative appears initially as an ontogenetic incompatibility, but, after examination, reveals itself to, in actuality, merely illuminate a wellspring of potentials. Thus, Simondon’s notion of the ‘negative’ is not a substantial or regulative negative—it is not a stage or phase. Unlike Hegel, Kapp, Leroi-Gourhan, or Stiegler, the process of individuation for Simondon is not a
synthesis or return to unity but a phase-shift of Being based on a pre-individual center of potentialized incompatibility.

Simondon’s description of communication as such is critical to consider in formulating a rigorous philosophy of becoming that applies to machines and their systems of equilibrium, which I argue is a highly pertinent concept when thinking of predictive patterning in deep learning, a development born out of second order cybernetics’ critique of first-order cybernetics. Simondon’s On the Mode of Existence of Technical Objects (2017) is composed of three sections. Part I, entitled Genesis and Evolution of Technical Objects, is devoted to the study of the machine itself and closely considers the terms of what computer scientist John Hart terms ‘intrinsic machine reality’—that is, Simondon parses the principles of the nature of the technical object while supplementing this study with corresponding examples. Part II, Man and the Technical Object, launches a critique of mechanology and first-order cybernetics, particularly Norbert Wiener’s mechanist paradigm. Simondon’s conception of technical objects opposes the conception of automata according to a human resemblance-model or the conflation of natural and technical objects, preferring, instead, an analysis by way of functional organization. In the final section, Part III, Genesis of Technicality, Simondon most lucidly articulates his normative program concerning the convergence between technics, the machine, and philosophy.

Why is Simondon a thinker of environmental synergies? In order to make the normative value of ‘technics’ clear—for Simondon, ‘technics’, as a philosophical term, invokes normativity in a way that ‘technology’ does not—Simondon recalls a curious incident. Simondon notes that ‘about ten years ago’ a group of science university students attempted a small profanation that illuminates the normative value of technicity outside of the practical consequences they generally appear to entail. The science students disrupted the clock atop the Paris Observatory, causing an uproar (2017: 229). Simondon highlights this as an example of the inheritance of technicity’s values surpassing utility, critiquing the Heideggerian conception of technics as separate utensils understood solely through their relational status as ontic objects (i.e., by way of their use-value), shining a light on the necessarily networked nature of technics—such is the reticulated structuration, which can change in
intensity but never disappears (even though its ‘readiness-to-hand’ is modulated by way of its breaking). The reticulated nature of technics is thus well illustrated by the image of the Paris Observatory clock domineering over the perturbed Parisians.

According to Simondon, ‘technics’ considers the coordinated and mutually organized relation at the level of machines, man, and culture. For Simondon, ‘the true nature of man is not to be a tool bearer—and thus a competitor of the machine, but man’s nature is that of the inventor of technical and living objects capable of resolving problems of compatibility between machines within an ensemble’ (2017: xvi). In rendering machines compatible with a particular function, man opens up the mutually contingent flow of information, a signal of transindividual exchange. Man’s assiduous invention and reinvention also invites technicity to unmask the pretensions of rationality, with Simondon’s concept of invention shepherding the long-term progressive undertaking of a program of self-betterment and self-improvement rather than the blind effect of contingent causes.

In Genesis and Evolution of Technical Objects, Simondon pursues a review of various technical objects and how the technical object, in itself, is characterized by sundry functional processes and modalities of genesis. Simondon separates the genesis of the technical object, by which it becomes a proper object of study, into a tripartite and non-dialectical cast: the element, the individual, and the ensemble (20). Much of Simondon’s research is devoted to the erudition of particular machines, their evolitional lineage(s), and their functional assemblies—Simondon undergoes this pursuit with impressive rigor. From Coolidge and Crookes tubes to thermo-dynamic machines, anode-cathode synergies, semi-conductors, and vacuum valves, Simondon carves a pure schema of functioning, examining technical objects and their conductance by way of and through the phenomena from which their fecundity foments. Of particular interest to Simondon is concretization, the process by which any technical object is posited within an intermediate place between the natural object and its scientific representation. This process is separate from invention, the latter dealing with our genealogical heritage and natural kinds. Rather than the shift from idea to physical artefact, concretization deals with internal self-coherence (cycles of refinement), the ‘way technical objects shift their internal composition as they iterate from one version or instance of a schema to the next’ (Rieder, 2020: 61-62).
According to Simondon’s system, the *primitive technical object* is distinguished from the constitution of a natural system—the primitive technical object is not a natural/physical system but the ‘physical translation of an intellectual system’ and, thus, a bundle of applications (Simondon, 2017: 49). Opposed to the *primitive technical object* is the *concrete technical object*, which produces a mapping of causes and effects by way of internal coherence (homeostasis), a closure of functional resolve that designates the technical object’s evolution and processes of human intervention. Simondon provides the example of an artificial plant/flower grown in a greenhouse, which yields petals—‘a double flower’—and is unable to bear fruit due to processes of human grafting (49). By way of *artificialization*, the interventive rendering of a natural object into a complex system of thermal and hydraulic (i.e., autopoietic) regulations via machinic coherence, we see how biological capacities and their functions are outpouched to a mechanic framing system and, simultaneously, are specialized in cyclic fashion.

In *Man and the Technical Object*, Simondon’s criticism of Wiener’s project brings forth considerations similar to that of cybernetic constructivism, endo-modelling, and action-oriented neuroeconomic patterning—the tenets of second order cybernetics which we will further elaborate on soon. Written in the 1950s, this section finds Simondon critiquing Wiener’s 1950 publication, *The Human Use of Human Beings*. Conceptualizing information as an entity distinct from the substrate(s) carrying it and likening self-regulating technical objects to living beings, Wiener here proclaims that:

‘[i]f the feedback system is itself controlled—if, in other words, its own entropic tendencies are checked by still other controlling mechanisms—and kept within limits sufficiently stringent, this [disastrous instability] will not occur, and the existence of the feedback will increase the stability of performance of the gun. In other words, the performance will become less dependent on the frictional load; or what is the same thing, on the drag created by the stiffness of the grease. Something very similar to this occurs in human action’ (1954: 25).

According to Wiener, man (and the animal) have a kinaesthetic sense that, like the machine, is subject to varied external environmental effects related to informational...
exchange by way of negative feedback. In turn, contingency acquires meaning by way of reference to recursion. This is precisely why Wiener compliments any mention of homeostatic processes with internal regulation, finding a parallel in the nervous system and computing machines wherefore computing machines and human/animal nervous systems are conceived of by way of reference to physiological processes of detection, an ‘all-or-none’ principle of measuring transmitted intensity (Wiener, 1965: 120). Following the prototypic probabilistic laws of internal regulation and Leibnizian universalism, Wiener’s cybernetics conceives of information by way of measurement as a degree of organization. For Simondon, however, technical objects must be studied in their evolution in order for one to discern the process of concretization. Simondon is not satisfied with Wiener’s conception of individuation by way of circumscribing probabilistic events. While Simondon’s conception of individuation is equipollent to an understanding of information concerned with that which precedes differentiation and facilitates an operation in a system, Simondon also harbors an ulterior concern: the intra-individual psychical problematic of perception and affectivity, which leads to the collective level of the transindividual.

Since Simondon’s target is first-order cybernetics, with reference to Wiener in particular, it makes a great deal of sense that criticisms similar to those launched by Simondon in the late 1950s would be prodded forth by those second-order cyberneticists (of the 1960s and 70s) who endorsed the endo-model. The endo-model provides for an understanding of models within systems, as opposed to exo-models, or models of systems (i.e., models that we, as observers, construct of systems). The endo-model is a stable and simulated internal control system used to model anticipatory control dynamics between mode, system, and environment. This endo-model also introduces environmentally coupled relations of entailment, force, and influence, wherefore the phenomena of circular causality, self-reference, and self-production dovetail via autopoiesis. Unlike Wiener’s interest in regulation by way of negative feedback, autopoietic systems—as delineated by Francisco Varela, Humberto Maturana, and Ricardo B. Uribe’s work in biology and supplemented by Milan Zeleny’s work on the economy of self-sustainable systems—deal with the structural knowledge that makes a system capable of producing/reproducing its unique self-organization. Unlike Wiener’s cybernetics, second-order cybernetics’ autopoiesis necessitates a physical boundary that separates the system from its surroundings; in
Simondon, we see a similar treatment of technical objects and their associated milieu(s), i.e., a similar segregation of subjects from objects. As a theory of self-reference, autopoiesis takes those processes generated through a closed organization of production and designates that this same organization is regenerated through the interactions within a system’s own products (or components).

Ernst von Glasersfeld, Heinz von Foerster, and Maturana’s elaboration of machines as autopoietic or self-creating systems articulates Simondon’s concern in distinguishing how transindividual systems can be considered as distinct from a transmission model where knowledge is directly thought of and conceived as being a representation of an external objective or mind-independent reality (as in the case of Wiener). According to Glasersfeld and Foerster’s functional constructivism there is a systematic interface from which all of our knowledge about the world springs forth. We do not have access to the description of any environment but, instead, features—particular patterns with which we construct possible orderings of functional relationships (systems of categories, feature spaces, objects, states/state transitions, etc.). That is, we do not empirically recognize the given objects of our environment but are involved in constructing them by way of the informational regularities that becomes systemized, presented as they are at the interface of our cognitive system (Foerster & Glasersfeld, 1999). Glasersfeld’s emphasis on observationally-constructed consensual domains finds its compliment in Maturana’s notion of structural coupling(s) between system and environment, where consensual domains of interaction and communication are ecologically ordered between objects, events, and classes (Maturana & Varela, 1980). Moving from a reflective judgment and the moment of the ‘I’ to the ‘not-I’, communication is no longer about registration of information or its transmission, but instead a circular coupling between the ‘I’ and its environment in which each reentering (homeostasis) is indicated by the integration of reflection. For Simondon, this means a structural coupling between subject and totality and technical objects facilitate such transindividuation.

According to the research program of second-order cybernetics, there is reflexive acknowledgement between structure and behavior regardless of whatever a priori predications observers adopt. For such second-order cyberneticians it is critical to recognize that although there are such a priors, observers become reflectively aware
of them vis-à-vis the epistemological, evolutionary, and ontogenetic development of systems (which observe and ‘converse’ with one another). This turn is often captured by the umbrella term ‘radical constructivism’, which endorses Jean Piaget’s conception of knowledge as an adaptive function, echoing Simondon’s appraisal of Wiener’s cybernetic program for being mistakenly founded upon the ‘intention of command and communication in the living being and the machine’ while eliding detailed considerations as to ‘how one can put individuals representing homeostatic functions at the heads of [organizational] groups’ (Simondon, 2017: 160). Glasersfeld, Foerster, Valera, and Maturana take up similar concerns regarding the conception of knowledge and its adaptive function, wherein ‘cognitive efforts have the purpose of helping us cope in the world of experience, rather than the traditional goal of furnishing an ‘objective’ representation of a world as it might ‘exist’ apart from us and our experience’ (von Glasersfeld, 1991).

Despite the founding fathers of cybernetics such as Wiener, McCulloch, Bateson, and co. emphasized autonomy and self-organization vis-a-vis the self-organization and subjectivity of modelling, they were not all first-order reductionists. Ashby’s constructivist turn is particularly important for the move away from first-order cybernetics—where a system is understood as passive and objectively given, such that it can be manipulated—into second-order-cybernetics, where the system is seen as cast in engagement with the observer. According to Ashby’s ‘constructivism’, the observer, too, is a cybernetic dictum. In Ashby’s framework, there are two critical principles that have become most important for homeostatic self-regulating systems:

1) **Homeostasis of Internal Essential Variables (Principle of Ultrastability)**; according to this principle variables move beyond specific viability limits and, as a consequence, are part of adaptive processes that are triggered by and re-parameterize a system until it reaches a new equilibrium, at which point homeostasis is restored. In physiology, one can think of such essential variables as corresponding to blood pressure, heart rate, blood sugar levels. Such systems embody two levels of feedback at least: i) a first-order feedback that homeostatically regulates essential variables, like a thermostat, and a second-order feedback that allostatically reorganizes a
system’s input–output relations when first-order feedback fails (Ashby, 1952).

2) *Law of Requisite Variety;* a successful control system must be capable of entering at least as many states as the system being controlled (i.e., ‘only variety in R can force down the variety due to D’ [Ashby, 1956: 206-207]).

Ashby’s constructivist description provides a bridge between first- and second-order cybernetics, providing a paradigm highly useful for those contemporary models of neuro-inferential ‘perceptual control theory’ and ‘inference to the best prediction’ in Bayesian modeling. Ashby’s principles imply a minimum level of complexity for a successful controller (or, to recall Simondon, an agent of ‘individuation’), which is determined by the causal complexity of the environmental states that constitute potential perturbations to a system’s essential variables.

For Simondon, such ‘error-correction’ is inherent to how we deal with technical objects as inherently machinic, for they necessarily wield with equal force *a rapport to man* and *systems-relational characteristics* (i.e., *analogical structure* and *analogical human dynamism*). These two internal characteristics of the technical object simply cannot be understood if the technical object is conflated with the tool, ‘which then makes it lose its individuality and therefore its own value; as Piaget has remarkably shown based on archaeological and ethnographic considerations, the tool is deprived of its own individuality because it is grafted onto another individualized organism’s body part and because its function is to extend, reinforce, and protect but not replace the latter’ (Simondon, 2020b, 417). For Simondon, machines are not externalizations (of mind, memory, or intentionality) but endowed with differential relational situatedness in their own right. Simondon’s critique of Wiener is at the level of cognition—including perception and action—and invention, with an interest in how systems maintain the homeostasis of essential variables and of internal organization.

More generally, Simondon’s critique of cybernetics is rooted in his refusal to consider the machine as an isolated system. His concern is not with autonomous machines but with machines that are steeped in an exchange between machine and environment. Thus, Simondon marks a difference between machines that operate
with and by their own process and those machines that are able to modify their own process according to environmental variation. Such machines are distinguished from those like the thermo-siphon, which operates simply by means of registering or reacting to information (2017: 266). Simondon’s interest is in systems that engage in a proper convergence of economic constraints and technical requirements, where the machine maintains its stable functioning (for as long as possible) while exchanging with its environment (i.e., reciprocal modification [2017: 21]). This is directly in contrast to how Wiener articulates man without reference to interiority by way of environmental homeostasis; Wiener conceives of the social system as ‘an organization like the individual, that it is bound together by a system of communication’ (1961: 24), where man and machine solely exchange information with their environment without being mutually constituted by way of adequation and relative positions of observational instability. Elsewhere, Simondon critiques not only Wiener but ‘Shannon, Fischer [sic], Hartley’ (2020b: 686) and the given relationship of information as solely a relationship between an emitter and receiver. This centers our debate over whether information should be considered an explanatory tool—an epistemic heuristic that does not refer back to a basic constituent of nature—or fundamentally ontological. Thus, this position ultimately concerns whether information can be said to be ultimately fundamental when understanding the ‘objective modal structure of the world’, which reiterates our earlier concerns about the relation between structure and matter.

For Simondon, in order for culture to incorporate technical objects one has to discover an adequate intermediary between the majority and minority status of technical objects. With the former, social relations are brought into relation while, in the case of the latter, the object is conceived as a matter of utility. As a consequence, the ‘secret and stable aspect of such a technics is thus not only a product of social conditions; it produces the structure of groups as much as this structure of the group conditions it. It is possible that every technics must to a certain extent contain a coefficient of intuition and instinct necessary for establishing the appropriate communication between man and the technical being’ (Simondon, 2017: 109). Such a divergence between man and technical being corresponds to the discrepancy between any (perceptible) model of empirical predicates and its categorization, making the claim that such a chasm is not arbitrary. Rather, this fracture answers to
the meta-theoretic explanatory aims between objects’ components/differential parts and the mind-dependence of sensory episodes: Simondon’s conception of communication accounts for the inferential-causal dependency between the presence of physical objects with given qualities and a corresponding sensory experience, and the qualitative homogeneity attributed to such experiences. However, such a framework cannot explain the distinction between ostensible and veridical perception, and thus the possibility of error when making perceptual reports concerning the sensory determinations supervenes upon communication, which is always privy to error-corrections—Simondon’s understanding of homeostasis, a becoming-equilibrium. Unlike tools taken in isolation, with machines and organisms, Being is thus conceived of as the structure of all structures, the absolutely primordial and comprehensive structure (Puntel, 2010: 439).

For Simondon, the individual (or Being) is the reality of any constituting relation rather than occupying the interiority of a constituted term; thus ‘the intrinsic, the interiority of the individual, would not exist without the ongoing relational operation that the ongoing individuation is’ (2020a: 50). Unlike the aforementioned dialectical treatment of being, when it comes to the level of the individual Simondon understands Being as the value of a relation—at the level of individuation, the individual can be considered ‘a being with an interiority relative to which an exteriority exists’ (50). Thus, it is not the externalized media (the liberation of organs, mind, or memory) that defines Being, but the system that this media, digital or analog, communicates across.

Consider the model of crystallization which, for Simondon, allows him to establish a transcendental field for individuation without positing a substantialist division between different modes of existence, such as ‘physical beings’ (e.g., crystal) and living beings (e.g., plants). For Simondon, there is an ontological difference between physical and living beings: the former is characterized by carrying its associated milieu with it. For instance, the “crystal stops growing when you remove it from its aqueous solution” while the “plant may stop growing if you do not water it, but it carries a good deal of water with it, which allows for greater regulation of the relation between its inner and external milieus. It even puts water into circulation with its ecology” (Lamarre, 2019: 109). For Simondon, the transcendental movement of
evolution is not teleological or dialectical but deals with structure and reorganized material flows along transindividual relations, recombining aspects. Although some, such as Steven Shaviro, may draw the distinction that in Varela’s ‘autopoiesis, the emphasis is on a continuity that is created and preserved in and through continual change and interaction with the environment, whereas in individuation and [Whitehead’s] concrescence, the emphasis is on the production of novelty, the entity’s continual redefinition, or becoming’ (Shaviro, 2009: 112), for Simondon the relational system maintains itself through dynamic interaction with its environment, re-creating the very processes that produce it. An entity not only reconstitutes itself by actualizing potentials that preexist in a metastable environment but negotiates this reconstitution with recursive homeostasis. This recursive logic is inseparable from the unspooling of novel systems, moored by homeostatic thresholds.

It is critical for Simondon that the technical object does not facilitate its own operation(s) but that there is an integration between the machine and the technical. Simondon often makes mention of ‘the virtual’, remarking that ‘[t]he living thing has the faculty to modify itself according to the virtual: this faculty is the sense of time, which the machine does not have because it does not live’ (2017: 157). It is important to note that Simondon’s conception of the virtual is distinct from Deleuze’s. Simondon is not interested in the possibility of modification of process. He is, instead, describing a real process and this real process is happening in actuality, i.e., the process of individuation. Consequently, Simondon is interested in the media object as a threshold of intensity and quality—here, Simondon is working against the hylomorphism of pure matter and pure form/the alliance of form and matter, which he deems a contradiction. For Simondon, the physical object is a bundle of differential relations, an organization of thresholds and of levels which are maintained and transposed via a myriad of variegated situations, with the object’s properties cohering and undergoing variations as it moves from one state to another (2020a: 264-265).

To better understand this, we ought to situate Simondon within the history of philosophy. Simondon’s philosophy begins with the Aristotelian classic model whereby we have matter, devoid of shape, quality, or determined characteristics, and we have forms, which are a priori and characterize matter by giving them form (while
being unique in kind as distinct causes). Simondon is actively working against this Aristotelian model of hylomorphism: for Simondon, there are no *a priori* forms that are imposed onto undetermined matter—matter is determined itself through the process of individuation. Simondon begins from matter rather than *a priori* forms, as forms emerge through a difference of matter by which matter is crossed, like a (quantum/differential) field, by a difference of potential. This is also analogous with our empirical observations—Simondon thus remarks that, if ‘to perceive consists in increasing the information of the system formed by the subject and the field in which it is oriented, the conditions of perception are analogous to those of every stable structuration: a metastable state must precede perception’ (2020a: 269). This ‘objective field’, which Simondon often makes reference to and describes as a primitive, neutral, and ‘magical’ stage, is the arena upon which man and mediation find themselves fundamentally structured through circuits of exchange qua being—that is, ‘[m]an finds himself linked to a universe experienced as a milieu’ (2017: 177).

For Simondon, the objectivation of mediation has a correlative in the subjectivation of mediation, which is object-ified and objectivized by way of the technical object that tethers man and the world to one another. The field of reference here, the ‘magical stage’, precedes mediation and, thus, precedes subjectivization or objectivization, neither fragmented nor universalized; it ‘is only the simplest and most fundamental of structurations of the milieu of a living being: the birth of a network of privileged points of exchange between the being and the milieu’ (2017: 177). This conception of a differential stage that precedes mediation and mediation’s becoming-subjectivized or -objectivized is similar to an electric field of electrostatic vectors and it is no coincidence that Simondon often recalls such electrical fields often in his writing.

For Simondon, these two ideas—matter and field/neutral foundation—are related to one another, as demonstrated in his references to the (preindividual) ‘found’ [*fond*] as the background upon which a form/figure may emerge:

…there would not only be a genesis of technicity, but also a genesis on the basis of technicity, through the splitting of an original technicity into figure and ground [*fond*], the ground corresponding to the functions of
totality that are independent of each application of technical gestures, whereas the figure, made of definite and particular schemas, specifies each technique as a manner of acting. The deepest reality [réalité de fond] of technics constitutes theoretical knowledge, whereas the particular schemas give us praxis’ (2017: 171).

For Simondon, matter is like a field with differences in potential; forms emerge in matter and they are not given a priori. Form is not a priori imposed onto undifferentiated matter but, instead, forms emerge through a process of individuation.40 For Simondon, given the technical operation that gives rise to an object with form and matter, the dynamism of this operation simply cannot be represented by the matter-form pair. Unlike the Hegelian dialectic based on the notion of identity and non-identity—the opposition between ‘A’ and ‘not-A’, or ‘I’ and ‘not-I’—Simondon’s work on relations seeks to explain the genesis of phenomenal reality (including the objects populating it) and the subject by way of a dialectic founded on the idea of the differential, rather than contradiction.41 Difference, as indeterminate and preindividual variation, is not the limit between two given identities but a non-phenomenal condition of all identity engendered as a determined object of and for thought. Simondon’s differential relations place media in relation with their spatio-temporal relations of realization; this kind of infinitesimal difference accounts for genesis outside of the self, understanding the real/actual non-phenomenal conditions of the process of individuation of thought. As with Deleuzean difference, Simondon’s difference can be linked to the model of calculus, which maps the processes by which thought determines itself on the basis of that which is non-phenomenal, on the basis of the differential (the $ds$). As a process of actualization or becoming-differentiated,42 individualization is always and necessarily a genuine creation. Progressing by way of spatio–temporal dynamism, a differentiated idea is differentiated—it is a process of individuation in the sense of dramatizing the idea, producing an ‘indistinct differential relation in the Idea to incarnate itself in a distinct quality and a distinguished intensity’, with the result being that ‘the individual finds itself attached to a pre-individual half which is not the impersonal within it so much as the reservoir of its singularities’ (Deleuze, 1996: 245, 246). Railing against hylomorphism, Simondon remarks that ‘[t]he form and the matter of the hylomorphic schema are an abstract form and an abstract matter’ (2020a: 22), where:
[t]he hylomorphic schema is thus a couple in which the two terms are clear and the relation obscure [.…. And] represents the transposition into philosophical thought of the technical operation reduced to work, and taken as a universal paradigm of the genesis of beings. It is indeed a technical experience, but a very incomplete technical experience that is at the basis of this paradigm. The generalized use of the hylomorphic schema in philosophy introduces an obscurity that comes from the insufficiency of this schema's technical basis’ (2017: 248).

For Simondon, as in the example of a brick, definite Being does not result from the combination of unspecified matter with unspecified form (where form is imposed upon the brick). Simondon criticizes this Aristotelian hylomorphic model that presupposes a priori forms—for Simondon, there are only forms insofar as they are co-determined by a process. Thus we do not need to turn to Whitehead or Deleuze for processual construction of subjectivism that emerges bottom-up.43

Simondon’s considerations of practical reason recall C.S. Peirce, where we have knowledge which depends on actions/decisions that are taken. Similarly, knowledge for Simondon is a know-how—to learn how to cope with environment, to make accurate predictions related to this environment, and so on. Knowledge as such provides us with a means of selecting important information in order to react in appropriate ways and to achieve a specific goal. For Simondon, the process of individuation is not so different from this idea, such that decisions taken or the knowledge of an environment that one has is not absolutely true but, instead, true relative to an appropriate solution to a specific problem. Accordingly, Simondon provides us with an intersubjective conception of environment; the creation of knowledge necessitates the most efficient way of actuating a goal.44

We also ought to note that all communication for Simondon is prelinguistic. Communication as such is exacted by way of individuation; during this process of individuation, there is a sort of negotiation by way of action. As it involves the actant, action always forms a rapport with a discrete part/element such that the other part/element has to act in response in order to preserve its own equilibrium. Little by little, both elements ‘learn’ how to interact; signification is the selection of or the
capacity of recognizing specific actions or affects coming from the environment or milieu. Thus, Simondon remarks that:

>[t]he emergence of the distinction between figure and ground is indeed the result of a state of tension, of the incompatibility of the system with itself from what one could call the oversaturation of the system; but structuration is not the discovery of the lowest level of equilibrium: stable equilibrium, in which all potential would be actualized, would correspond to the death of any possibility of further transformation; whereas living systems, those which precisely manifest (2017: 177).

Simondon’s description of communication provides us with a rich philosophy of becoming. Consider how this structuration would apply to, say, bacterium; bacterium are not ‘intelligent’ (i.e., sapient) and do not have a language but, nonetheless, are able to move within and through their environment in order to find food by discerning pertinent signs (e.g., difference in sugar in water). Thus, the bacterium selects different intensity from a signal or environ that is significant for it, matching exteroceptive and interoceptive inputs; the bacterium does not visually ‘see’ anything but, by way of differential patterning, becomes sensible to difference(s) in degrees in relation to the substance it is interested in, which allows for it to move effectively and knowledgeably—to move with reason. This top-down analytical approach allots a kind of prediction-error. This is what Simondon means when he designates signification before language (i.e., it is ‘prelinguistic’), where intensity is precisely that which allows for reaction. In their being non-representational, deep learning neural networks are, similarly, prelinguistic. Consider how deep learning systems like AlphaGo Zero use previous data as a signal-processing heuristic to predict future variances. Simondon’s notion of transindividuation, as applied to the bacterium, is not terribly different from how deep learning algorithms like AlphaGo Zero pluck certain pertinent data to ‘train’ themselves by way of patterned-reinforcement learning. Just as sugar serves as the basic observational empirical data for the bacterium, for predictive patterning there exist protocol statements/propositions. With machine learning, the probability of any hypothesis is not determined a priori but determined by way of conditions and implementations. Similarly, for Simondon transduction is never exterior to the terms
that it brings forth, patterning through the inherent tensions in a domain (2020a: xxiii).47

Often, the roots for this kind of paradigm are linked to Carnap’s confirmation theory, which provides an outline of the acquisition of knowledge from experience. Specifically, in *The Logical Structure of the World* ([1928] 2003), Carnap defines an explicit computational procedure for extracting knowledge from elementary experiences. For Carnap, Simondon, and the kind of inferential machine learning logic that we are interested in—i.e., a Bayesian statistical logic that cannot be explained away with the extension of mind, intention, or memory, but navigates a differential space—objects deal with and restrict themselves to structural properties.48 That is, objects are *objects of form*, where objectivity is structured by way of intersubjectivity, the dimensions of form structuring and holding together individual strands of content. As a consequence, the sole reason objects of knowledge are possible is because despite ‘the material of the individual streams of experience is complete diverging … certain structural features agree of all streams of experience … objects of knowledge are not content, but form, and they can be represented as structural entities’ (Carnap, [1928] 2003: §66). This hierarchy allots deep and varied empirical Bayes in a prediction error landscape where prior probabilities are ‘empirical’ in that they are learned and pulled down from higher levels, such that they do not have to be extracted de novo from the any current input. In terms of a bidirectional multilevel hierarchy, the upper layers of the network form ‘top-down’ predictions upon the basis of which data coming from levels below is assessed, where past certain thresholds of tolerance error signals ‘trickle up’ in a feedforward manner, triggering the system to revise its predictive models. This reliance on higher levels means that processing at one level depends on processing at higher levels. Such priors are bifurcated into hyperparameters (re: expectations of means) and hyperpriors (re: expectations of precisions).49

The pluralism of an open-ended form of practical reason is fundamental in this model of technical-/machine-communication insofar as it is reason-guided; a framework is not chosen by an individual but revealed preferences, a social process of some kind moving through a regulative ideal (Carus, 2017: 178). For Simondon, individuation has its own signal and signification, which are rendered functional to
the being’s relation with its environment. How, then, do we go from here to (object-)
language? First and foremost, we have to consider the operative importance for this
process of selection by way of intensity or degrees, which allows for the distinction
of further definition(s) by way of signification. Machine language depends on specific
individuation. This same process is the case with logic or any formal mode of
thought, but this occurs in opposite fashion. Concepts arise by way of a specific
interaction with formal language and any specific process of individuation gives
origin to concepts, which are useful for coping with a specific environment:

‘[t]echnical ensembles are characterized by the fact that in them a
relation between technical objects takes shape at the level of the margin
of indeterminacy of each technical object’s way of functioning. This
relation between technical objects is of a problematic type, insofar as it
puts indeterminacies into correlation, and for this reason it cannot be
taken on by the objects themselves; it cannot be calculated, nor be the
result of a calculation; it must be thought, posed as a problem by a living
being and for a living being’ (Carus, 2017: 157).

Simondon’s idea of indetermination corresponds to our previous discussion of
*potential* and prediction-error. For Simondon, any individuated being has a functional
relationship with its environment whereby its *relation(s) can change*. This indeterminacy
means that change/becoming in technical objects cannot be tied down to a doctrine
of representation/the image; for Simondon, the concept of information is important
for any ‘calculating machine’ because calculations cannot observationally ‘feel
through’ the environment (much like the aforementioned bacterium), at least not by
way of the same kind of sensorial feeling(s) that humans and most animals possess
(using qualia/epiphenomena/sensa). Nonetheless, machines are sensible to
information and this sensitivity is what Simondon is interested in via
indetermination; for Simondon, communication, data, and information are all
entangled in the world of actuality. Recall that, for Simondon, information is a
general term for the intensities which cause reaction and affection; in computing
machines, this is a process of information coming into a coupling with respect to the
machine, causing it to act or react in some way. Similarly, Carnap’s conceptual
engineering of constructivism is anti-representationalist, as the fruitfulness of a
concept motivates its adoption into certain contexts where said application had not previously been used. While we will not be following Carnap into the woods of symbolic logic, the bridge between Simondon and Carnap has been constructed simply to assert that, in addition to evincing a picture of second-order cybernetics—invoking principles of autopoiesis by challenging Wiener’s conception of information and homeostasis—Simondon’s conception of individuation by way of transduction (like Carnap’s problematization of inductive logic) deals with \textit{real relations between individuals}. Unlike Stiegler, who does not work with any measure of \textit{measurable loss} in his cynicism towards digital networks (for Stiegler, ‘neganthropy’ corresponds to an idealist noesis), Simondon’s concretization—the engine of individuation—asserts that we are interested in \textit{specific results}, which can only be understood by way of a system’s changes (and, invariably, its equilibrium).

\textbf{From Second-Order Systems to Deep Learning}

Let us now turn to the final section of our study—deep learning through the Simondonian schema of technics, individuation, and concretization. A particularly pertinent approach to understand the higher-order representational abilities of sentient and sapient cognitive behavior is the predictive processing paradigm (hereafter: PP), which explains how cognitive systems generate ‘representations’ of various phenomena on the basis of incoming information by way of a procedure called ‘prediction error minimization’ (Hohwy, 2013). Parsing deep learning by way of Anil K. Seth’s Bayesian modelling of the cybernetic brain and his work on PP, we shall endeavor through some of Simondon’s work on ecologies of influence, with a particular interest in objects (esp. networked digital media objects vide computation), infrastructural operations, and formal planes of reference.

According to certain cultural commentators, the epochal cultural development of ‘deep learning’ invokes a shift from linear Cartesian thinking towards intentional obfuscatory ‘black box’ de-spatialisation. Frank Pasquale remarks that, rather than intelligibility, fields such as ‘actuarial finance’—increasingly privy to high-speed trading via AI —cultivate a sense of ‘secrecy’, establishing a barrier between ‘hidden content’ and penetrability, where the former is associated with the machine’s and
machine learning’s top-down mereological parsing of Big Data sets and unauthorized access to its endogenous encoding on behalf of the ‘user’ (Pasquale, 2016: 16). Similarly, Cathy O’Neil likens data-based mathematical complex computation to ‘Gods’—impenetrable and ‘opaque, their workings invisible to all but the highest priests in their domain: mathematicians and computer scientists’ (O’Neil, 2017: 3).

Broadly speaking, Big Data and its computational methods have bolstered the long-term construction of our datafied algorithmic reality; the future implications are drastic, with implications including predictive policing, hiring practices, credit assessment, and criminal justice. Thanks to the widespread cast of today’s digital networks and the resulting availability of metadata and data we see why the neural metaphor that was once popular with early cybernetics researchers may make sense to invoke once more. Like the connective conditioning of synaptic connections between neurons that have previously fired together, Big Data allows for activity-dependent plasticity where causal lines are quickly cemented and, subsequently, capitalized upon by marketing campaigns. Jointed research in reinforcement learning has also resulted in a milestone for AI research. Using the logics of Hebbian associative learning and Monte Carlo ‘tree-search’ algorithms, ‘deep learning’ and its Generative Adversarial Networks are predicated upon a scaffold that probabilistically retrofits output; that is, given samples are drawn from two competing models fighting against each other, with a generative model capturing data distribution and a (competing) discriminative model distinguishing training samples while, simultaneously, generating fake data samples. Given large sets of sampling data, training data has likewise burgeoned, resulting in the strengthened self-reinforcing process that Bernhard Rieder calls ‘computerization’, thrusting deep learning research into celestial zenith.

The ‘Monte Carlo’ framework is deserving of closer examination. Christened ‘Monte Carlo’ after the gambling mecca, this analytical calculating method (developed during and shortly after WWII) utilizes simulative recall-and-precision while implementing random numbers (a la roulette) so as to simulate stochastic processes that had, until that point, been too complex to calculate. As an early example of analytical virtualization (and, arguably, virtual reality) the Monte Carlo method ‘came to constitute an alternative reality—in some cases a preferred one—on which
‘experimentation’ could be conducted’ (Galison, 1996: 119) By modeling a sequence of random scattering on a computer, the Monte Carlo sampling method ushered in a new epistemological plane for extracting information from physical measurements and equations. Its scheme of representation presupposes an ecology composed of discrete entities that interact through irreducibly stochastic processes. The Monte Carlo method, borrowing from both experimental and theoretical domains, negotiates the traditional categories of experimentation and theory; Peter Galison identifies this shift in the calculating machine as a development from ‘computer-as-tool to computer-as-nature’ (1996: 121).

Such technological changes, ushering in epistemic evolutions, necessitate paradigm shifts in how we understand technicity; this is a specific feature inherent to Simondon’s concept of concretization, the engine of conceptual technicity which attunes network objects to the sensitivity of local circumstances. Previous to Monte Carlo and neural networks was von Neumann architecture—von Neumann’s work on infinite random generators allowed for the sequential repetition of a finite cycle of numbers ad infinitum within a finite machine. Instead of treating cognition (esp. memory and intention) as a process that is extended by and through technical systems, convoluted neural nets constitutively ‘remodel’ themselves iteratively and reactively, proffering unique outputs which human players have, so far, been unable to predict. AlphaGo Zero, the Google DeepMind neural network that recently defeated the world’s highest-ranking Go player, Ke Jie, and 18-time world Go champion Lee Sedol, is perhaps the most celebrated example. AlphaGo Zero’s novelty is a byproduct of using the aheuristic ‘tree search’ pattern recognition, simulation, and backpropagation to probabilistically account for simultaneous scenarios: by iteratively building partial search-inputs with which to update its ‘weights’—or the default values of selection—such neural nets are able to start at a root node and recursively create non-terminal values that are revised according to ‘backpropagation’, or how simulated error scenarios unfold as a reactive gradient of layering. Multilayer ‘feedforward’ neural networks such as AlphaGo are not only based on binary classification or principles of registration but on an ecology of data which is elliptically remodeled according to a hierarchical scaffold, constructing an evolutionary closed-loop evaluation mechanism that optimizes according to the current action in question.
Advances in Bayesian networks and statistics are inseparable from these developments. The Bayesian approach calculates probabilities for various hypotheses in terms of degrees of certainty and ‘is ideally suited for situations where one might want to begin calculating probabilities for different hypotheses (e.g., concerning class membership) even if very few observations are available, continuously updating and refining prior probabilities as more evidence comes in’ (Rieder, 2020: 245). Bayesian networks are acyclical, directed graphs, illuminating model dependencies with nodes connected through the latticework of probabilities. In the case of machine learning, Bayesian classification allows for the capacity of algorithmic techniques that move between application domains where there are ‘habitats’—data sets and classification characteristics—where one set of techniques burgeons and another diminishes. With deep neural networks, this involves modeling complex non-linear relationships between input-variables and output-classes distributing calculations over parallel hardware. This technique is i) perceptual, and ii) apperceptive: at once a model based on image-detection, the empirical frame of registration and recognition found in first-order cybernetics; but also dealing with internal-classification based on advanced graphics processing where the most salient features are weighted according to df-idf frequency.

This sets the stage for an epochal dilemma re: contemporary computation’s internal logic. Were we to take syntax-based classical deductive computing, such as the Universal Turing Machine, as an ideal model (plucking neural nets from the mid-to-late twentieth century), we could characterize the parsing of information as a linear spatial procedure—one composed of sifting through data by moving forward and backward as information is divided into procedural units and consequential steps. However, ‘deep learning’ algorithms, as recently exemplified by advancements in reinforcement-learning AI (such as AlphaGo Zero), seem to ‘experience’ data opportunistically. Such deep learning software are able to decisively re-integrate evaluative metrics that deviate from a sample-proportion.

Sybille Krämer and Horst Bredekamp, describing contemporary advances in computation at the level of cultural techniques, remark upon the long-term effects of computerization, noting that:
…cultural techniques are promoting the achievements of intelligence through the senses and the externalizing operationalization of thought processes. Cognition does not remain locked up in any invisible interiority; on the contrary, intelligence and spirit advance to become a kind of distributive, and hence collective, phenomenon that is determined by the hands-on contact humans have with things and symbolic and technical artefacts’ (2013: 26-27).

Here, Krämer and Bredekamp describe calculus as a ‘mechanism of forgetting’ (26), exacerbated by how computation implements operative signs and mathematical competence sans-reflection. The duo thus liken computation qua calculus to Stiegler’s and Derrida’s reification of the hypomnēmata, the two see the register of computation as externalizing cognition from the invisible interiority of the minds of individuals by way of distribution, shooting forth these grand prostheses which not only make perceptible that which was cognitively invisible but operationalize dissociation into previously unforeseen heights. Stiegler, Krämer, and Bredekamp recycle a pessimistic tale that ensnares the planetary apparatus of computational becoming where the sole means of recovery amounts to re-interiorizing that which has been computationally exteriorized. Recall that the mission of Hegel’s phenomenological propaedeutic investigation into the structure of thinking, raising it to the ideal of a ‘presuppositionless science’, was to determine that even appeals to sensory immediacy at the ground of experience are always already mediated by the concept. But this concept finds a sea change in such thinkers of digitality, for whom a new concept of networked misfortune has taken anchor.

Has the automation of intelligence left the biological human organism behind, with the human organism reduced to the reproductive organ of the machine phylum, thus fulfilling the role of a pollinator for machine reproduction? This fear far predates computerization. This is, in fact, what Samuel Butler, in his books *Darwin among the Machines* (1863) and *Erewhon: or, Over the Range* (1872), prognosticated with the intensive spatium of impersonally structured thought. André Leroi-Gourhan carries such fears of the organized inorganic into the terrain of self-obsolescence in *Gesture and Speech*, foreseeing the biotic human as a fossil in the technosphere, with the human motor brain exteriorized in the last instance and, accordingly, captured by
autonomously locomoting robots, total mechanicity commemorating automation’s final hour.\textsuperscript{60} Today, such fears of transhumanism run rampant haunt the popular imagination, the incubus of a fully automated future aggravated by conspiracies of synthetic pathogens and weaponized pandemics. Compounded with Pasquale’s ‘black-boxing’, these fears paint a horror-stricken scenography of humans not only tethered to our machinic overlords but utterly unable to comprehend their masters’ whims—outflanked and outpaced, a picture of man succumbing to ‘parasitism-as-atrophy-of-individuation’ (Moynihan, 2020: 85). Nonetheless, mustering philosophical concepts alongside historical-archeological technical pursuits shows that such is not the case (at least not yet)—there is still a great deal of contingent genealogical residue between mankind and even the most advanced deep learning algorithmic logic.

Functioning like brains, deep learning algorithms engage in predictive inference, working through the causes of sensory- or data-inputs by minimizing prediction-error(s). Anil K. Seth has been one of the foremost thinkers in philosophy of mind and researchers of PP to show how the predictive perception of sensorimotor contingencies originates not in the Helmholtzian principle of perception-as-interference but in 20\textsuperscript{th} century cybernetic principles that emphasize homeostasis and predictive control (i.e., second order cybernetics). Seth, drawing on Ashby’s work on homeostasis, builds on the \textit{Law of Requisite Variety} by arguing that the nature of a controller capable of suppressing perturbations imposed by an external system must instantiate a (virtual) model of that system. Interestingly, the paradigm of PP not only allocates us with a description of algorithmic intelligence’s patterning-based derivability but, in turn, how neuro-inferential mentality occurs by encoding such patterning. This Bayesian model of mind anchors rationality as a formal-computational reformulation of inductive reasoning, whereby cognition is a process of directing order out of noise. As Seth demonstrates, the PP paradigm proffers an analogy of mental ‘self-modeling’ whereby the rational agent is denied epistemic access to \textit{how} exteroceptive perception is patterned, as active inference involves source-detection and ‘seeking evidence that goes against current predictions, or that disambiguates multiple competing hypotheses’ (Seth, 2016: 24). Neural network research has proven to illuminate great insights into how our own neural processes work, destabilizing the standard model that pairs ‘figurative projection’ with
phenomenological centering. As Seth’s research in phenomenal representation shows, the perceptual presence of disambiguation is one of counterfactually rich and relatively perspective-dependent integration.

This gives us a spatial ecology of mind and perception. If, for instance, we take a tomato on a plate, the mental representation of the tomato is causally integrated via the plate’s presence. Similarly, recalling Simondon and the bacterium, we can consider how the sugar-content is embedded in a functional field of engagement, a restricted environment. Such material-biological codetermination is the product of restricted horizons, where restrictedness decisively determines how sentient organisms are to be conceived of as ontological configurations (Puntel, 2008: 276). In both examples, causal contact with all other objects in the perceiver’s vicinity informs the derivation of relevant information out of noise. Consequently, spatial perception is based on a kind of signal processing where ‘objecthood’ is embedded within a causal ecology of spatio-temporal relativity. The tomato and the human perceiver are, in a sense, ‘flattened’, with scalar inversion dependent upon relative ecological contingency—the tomato plays as much of a role as the plate does in distinguishing one object from another; this logic can be extended for objects that are less visually explicit, as their pertinent features are operative modal instruments nonetheless. As Reza Negarestani remarks, recalling the work of the late Carnap, such source detection is possible insofar as the estimates are probabilistically constrained such that they are hierarchically organized in order to track features at unique temporal and spatial scales that predict one another (Negarestani, 2018: 162-163). This is precisely the logic of unsupervised deep neural networks like Alpha-Go, which, engaging in iterative development through self-play, learn vide randomized training data, achieving stability by way of discerning operations into patterns of structure-preservation for the conceptual and formal dimensions guiding theoretical constructions.

Coordinating itself to its environment, such a simulative system produces an ever-more accurate ‘map’ of the world to which it belongs. Source detection, in principle, is not simply circumscribed to the semblance of data but invokes complex theory-forming systematizing conceptual abilities that theoretically map and intervene upon the world by plucking and hierarchizing features that are most pertinent. Perceivers
of red tomatoes, sugar-patterning bacterium, and sample-training deep neural networks similarly imbied the informational indexes that they register from the environment in a conceptual and formal theoretical context that makes explicit the objective modal structure of the world. In the case of deep learning this means that there is, beyond the ontological framework, also a more fundamental theoretical framework that becomes adaptively activated as, wittingly or not, the concepts that are at first solely granted theoretical use-value eventually acquire observational ones, without implying that the concepts designate or describe changes. To perceive something as something involves an active contribution by the thinking mind, through which agents extend their differential capacities (again: the concepts do not change) in relation to their environments, binding their labeling responses to sensory stimuli into counterfactually robust relations of incompatibility and consequence. Perceptual reports are non-inferentially prompted into epistemic challenges—observational concepts and perceptual reports are every bit as liable to assessment and revision as any theoretical concepts which have no perceptual uses but only inferential ones. And while observational concepts ground empirical knowledge insofar as they articulate conceptual responses to environmental inputs coming from sensation, this does not mean that those concepts are Given in the sense of foundational items of knowledge that are epistemically independent (Sellars, 1965).

This is one important tenet of the PP model’s conceptual construction. It ought to be qualified by how it demonstrates the human unconscious’ relative influence on bottom-up coding, thus summoning Kantian apperception. In fact, the PP model recalls several themes from Kant’s work on mentality, emphasizing: the ‘top-down’ generation of perception, the role of ‘hyperpriors’, the function of ‘generative models’, the process of ‘analysis-by-synthesis’, and the crucial role of imagination in perception. Consequently, the PP paradigm echoes Kant’s transcendental project as it explains how the mind tracks causal structure in the world through solely sensory data (Swanson, 2016). However, this approach emphasizes the global Euclidean structure, which, as Carnap’s Der Raum (1922) demonstrates in its chapter(s) on mathematical space and physical space, can be amended to tie the Kantian conception of intuitive space to the methodological role of constituting the framework for spatial judgments in experience. According to Carnap, Kant was incorrect in thinking that three-dimensional Euclidean space is an a priori necessary
condition of the possibility of experience—while Kant was correct in regarding the experience-constituting function of space, this system needed to be generalized. Here, Carnap uncovers how the constitution of spatial structure serves as a condition for all possible object-experiences and, therefore, how this relational constitution informs intuitive space and its logic, shaping the conditions of all successive objective experience. Similarly, for Simondon relationality effectively has the value of truth and is key to knowledge, such that both the relation within the subject and the relation between the subject and the object obtain the value of reality. Thus, true knowledge is not a simple formal rapport between an object-substance and a subject-substance but a relation between two relations, one of which is in the domain of the object and the other of which is in the domain of the subject; subject and object are, thus, understood by way of degrees of stability (Simondon: 2020a, 76).

For Carnap, the spatial system possessing experience-constituting significance, in place of that suggested by Kant, can be precisely specified as a topological intuitive space with indefinitely many dimensions. Thus, not only the attributes of the system but also that of its order-framework (i.e., corresponding formal space) are declared to be conditions of possibility insofar as object-experience is concerned. Here, every differential manifold is considered locally homeomorphic—local topological structures layer elements of perceptual experience uniquely, presenting them with necessary form independent of whatever freely chosen metrical stipulations are laid down by convention (Carnap calls these ‘optional determinations’). This provides our perceptual experience with a structure of intuition in something akin to the original Kantian sense but is extended to ‘intuitive space’. However, any ‘necessary form’—i.e., form necessary for ‘knowledge’—is made intrinsically explicit in perceptual acts and representational systems. At the most general level, the way in which a representational system—including that possessed by humans, bacterium, deep learning systems—maps its environment depends on the structure of its ‘locators,’ which define how a system discretizes data and conveys information relative to an address or coordinate system of variable dimensionality, where the latter specifies the number of parameters required for precise localization. Localization, equipollent to representation, works at the most fundamental level of empirical organization, as a system’s coordination to its environment is characterized in terms of reliable differential responsive dispositions (Brandom, 2007: 653). Localization is therefore a
base-level ostensive operation which guides a system to navigate its environment and reliably track phenomena within it (Ladyman & Ross, 2007). Such causal regularities span the most fundamental kind of information-processing system, where variable inputs are systematically correlated with specific outputs, to those such as AlphaGo, which use simulative play and backpropagation. In a broad sense, one can say that such systems ‘classify’ their environments by evincing such differential responsiveness, making patterns from updated forms; such patterns are not only a ubiquitous feature of the natural world but universal when engaging with and mending the world’s objects, mediating them into media.

Following this distinction between associative spatial stability qua differential relationality, we can challenge Kant’s contention concerning the significance of space for experience via the three-dimensional Euclidean system and extend this to the probabilistic paradigm of cognition, which emphasizes pattern recognition. In the ‘feedforward’ neural networks that occupy our interest and Hansen’s, alike, top-down signals instantiate a matrix of possible causal structure(s). Simultaneous to this top-down generation of prediction is the bottom-up neural signal flow against which the predictions are matched—this is, therefore, termed the ‘recognition model’. The PP paradigm emphasizes that the knowledge of how to generate patterns is actively used in order to recognize incoming patterns. As Andy Clark notes, ‘instead of attempting to directly train a (synthetic) neural network to classify images, the network first learns to generate such images for itself’ (Clark, 2015: 27), not by simply checking them against a database of previously-encountered images but by identifying endogenous rules, or ‘imagination procedures’, that the network utilizes to generate incoming stimuli for itself. This has become increasingly significant as we move away from the methodological aperture of recollective storage-and-retrieval modalities, or ‘token instances’ (Lake et al., 2015), and conceive of deep learning algorithms that match human performance as differentially surjected, considering sensation and perception as complimentary twin concepts rather than processes that follow one another. Thus, ‘perception would not exist without the differential utilization of sensation’ and the apprehension of relational structures between objects (or between the body and objects), while the operation of sensory differentiation can only be coherent with itself if it is made compatible by another activity, the activity of integration by way of perception (Simondon, 2020a: 230).
For Kapp, Leroi-Gourhan, and Stiegler, externalization is accomplished by way of alienating and projecting some contingent thing (mind, memory, intentionality) out of the body: the movement of externalization mirrors the dialectical structure of Hegelian subjectivity and its transcendental origin. The ideality of any concept or representation is always seen as the negation of the immanent real and its sublation into a higher (that is, transcendent) level of abstraction. However, knowledge, itself, is not unmoored by way of novel automatisms of exteriorizing interiorization and outpouching informatic exchange as Stiegler would have us believe; knowledge, being differentially determined, is always subject to its ecology. Regardless of what language we use—whether it be Hansen/Whitehead’s, Simondon’s, or Carnap’s—one point is clear when it comes to ‘feedforward’ networks and deep learning: rather than a return to Kapp’s ‘organ projection’ where deep learning’s nervous architecture and its sensory arrays are treated as an eversion of the human brain and its axonal synapses, networked into computerized threads, we must divaricate the procedural logic of the brain from its purported morphological export into the world of machines. Only then can we call ourselves responsible Prometheans and not despondent fatalists.

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Notes

1 Similarly, André Leroi-Gourhan remarks that ‘[t]he whole of our evolution has been oriented toward placing outside ourselves what in the rest of the animal world is achieved inside by species adaptation. The most striking material fact is certainly the ‘freeing’ of tools, but the fundamental fact is really the freeing of the word and our unique ability to transfer our memory to a social organism outside ourselves’ (Leroi-Gourhan, 1993: 235). Arnold Gehlen, in the same vein, also remarks that: Man is ultimately an anticipatory (vorschend) being. Like Prometheus, he must direct his energies toward what is removed, what is not present in time, and space. Unlike animals, he lives for the future and not in the present. This disposition is one of the preconditions for an acting existence, and human consciousness must be understood from this point of view. Indeed, all the aspects of man, which should be kept in mind through the ensuing discussion, are actually elaborations of the basic characteristic of man—action. We shall see that many of the isolated statements about man are really developments of one basic point of view—that man represents Nature’s experiment with an acting being (Gehlen [1940]: 1988: 24-26).

2 Stiegler uses the term ‘noetic’ to describe this rationality; the term comes from the Greek *noesis* and Aristotle’s *nous*, referring to the mind and to the understanding or awareness, which conditions human rationality.

3 Stiegler, recalling Gilles Deleuze’s ‘Postscript to Societies of Control’, often also remarks that technologies, analog and digital, are ‘pharmacological’ or serve as ‘pharmakon’, and thus are both poison and cure. Here, despite tracking in Derrida’s lexicon (of the ‘pharmakon’), Stiegler directly recalls Deleuze’s work on ‘control societies’ where Deleuze, remarking on novel technologies that diffuse the techniques of disciplinary society that Foucault identified, notes new possibilities of repression and possibility. In an interview with Antonio Negri titled ‘Control and Becoming’, Deleuze notes that: The quest for ‘universals of communication’ ought to make us shudder. It’s true that, even before control societies are fully in place, forms of delinquency or resistance (two different things) are also appearing. Computer piracy and viruses, for example, will replace strikes and what the nineteenth century called ‘sabotage’ (‘clogging’ the machinery) (Deleuze, 1995: 175). Nonetheless, Stiegler’s most recent publications, particularly *The Age of Disruption* (2019) and *The Nanjing Lectures* (2020), as well as his general identification of ‘tertiary retentions’ with ‘disruption’ and ‘entropy’, make clear that he identifies the artefactual capture of the earth as liquidating something primordial.

4 In an interview with Matthew Griffin and Susanne Herrmann, Kittler remarks that: That the media influence bodies through emergence and immersion, on that point we both agree. However, I don’t believe in the old thesis that thus the media are protheses of the body, which amounts to saying, in the beginning was the body, then came the glasses, then suddenly television, and from the television, the computer. The mythology is that everything frees itself from the body, dissolves and submerges in it again, in the sense of emergence and immersion, virtual reality, cinemascope, and hallucination …. I think to be able to describe a general media history, it would be better to work, like Luhmann, systematically from the independent histories of the technological media. The media don’t emerge from the human body, rather you have, for
example, the book, and the military generals in considering how they can subvert the book or the written word, come up with the telegraph, namely, the telegraph wire; and then to offset the military telegraph, they come up with the wireless radio, which Hitler builds into his tanks’ (1996: 739).

Kittler rejected this ‘old thesis’ that media function as prosthetic extensions of the human senses or of organs. In vigorously refusing this ‘old thesis’, Kittler preferred a more interventive and a system-theoretical relationship between media and organism, whereby tools establish culture.

Similarly, Arnold Gehlen remarks:

Given the obvious absence of specialization in human organs…, any theory that claims that man is directly descended from animals and that does not resort to a special supplemental hypothesis to account for this particular issue necessarily confronts the insurmountable problem of deriving primitive forms from developed ones (Gehlen, [1940] 1988: 80).

This moment of anamnesis is the moment of recollection and, in the Meno, the slave boy’s drawing in the sand of the gymnasium serves as hypomnēmata (the monument) for memory—a stand-in for the essence of true memory itself (mnēmē); the artificial apparatus in question, the inscription, is a monument (or artefact) as it makes memory technical and serves as a substitute for anamnesis, extending memory. For Stiegler, this recovery from anamnesis formats the techno-transcendental condition of the human experience of time by way of artefact-as-substitution. In the era of digitality, for Stiegler this has a particularly insidious nature:

…as this apocalypticism without God that now haunts the entire world, given that since 2008 the consumerist model, by collapsing, has made clear that it is no longer just the financial objects of logos, constituted by their hypomnēmata, which in the twenty-first century changed their meaning and social function, but also everyday and familiar objects — and, along with them, and since they alone can definitively undermine the foundations, das Ding, the Thing (Stiegler, 2018: 73).

For other philosophers such as David Chalmers and Andy Clark (and their theory of Extended Mind), digital technologies such as iPhones are normatively positive; the two point to how such technologies offer those suffering from neuro-degenerative diseases such as Alzheimer’s the opportunity to offload memory onto devices/artefacts. According to Chalmers and Clark’s Parity Principle, such external devices do not merely facilitate cognitive tasks but are in fact constitutive of those cognitive operations in question; cognitive states and processes extend beyond the brain and into the external world when those relevant parts of the world function in the same way as do unquestionably cognitive processes in the mind (Chalmers and Clark, 1998; Clark in Chalmers, 2008: ix). That is, a notebook or smartphone can be understood as cognitively constitutive if and only if someone consults it for directions where they would have otherwise had to consult their memory/memorize these directions. In this sense, Chalmers and Clark approach digital technologies with a more fine-tuned and function-oriented interest in mentality, rather than ascribing to the wholesale cynicism of Stiegler.

Stiegler clearly co-opts Derrida’s rendering of Plato (made obvious by Stiegler’s use of the term pharmakon), which sees hypomnēsis as a derided category and mechanical reproduction as normatively negative; Derrida writes in Plato’s Pharmacy that ‘[t]he sophist thus sells the signs and insignia of science: not memory itself (mnēmē), only monuments (hypomnēmata), inventories, archives, citations, copies, accounts, tales, lists, notes, duplicates, chronicles, genealogies, references. Not memory but memorials’ (1981: 107). Writing, as a dialectical simulacrum of ‘true science’, becomes a pharmakon.

Stiegler most often uses the term ‘exosomatization’, which is a holdover from Lotka.

Marshall McLuhan’s oft-quoted apothegm, ‘the media is the message’ offers a cruder version of the same argument; while McLuhan is not a ‘philosopher’, it would not be wholly inappropriate to count him as a member within these ranks.

Specifically, Canguilhem referred to it as ‘general organology’.

David Bates writes that ‘…cybernetics as a transdisciplinary science had its very origin in the insight that pathological physiological performances could be mapped, structurally, onto technological failures with mathematically identical characteristics. While Wiener and his colleague Julian Bigelow discovered that excessive compensation could lead to increasing oscillations that eventually became uncontrollable, leading to great disorder and a failure to find equilibrium’ (2014: 33-34).

By ‘life’ Canguilhem has in mind something akin to Henri Bergson’s conception of élan vital, such that biology is vital, pre-existing the body or the mechanistic thinking of it. In turn, Canguilhem’s ‘general organology’ allows the body to be understood as a machine, or in mechanist fashion, but asserts that there is a more primary biological primer which escapes this description:
If vitalism translates a permanent exigency of life within the living, mechanism translates a permanent attitude of the living human toward life. Man is here a living being separated from life by science and attempting to rejoin life through science. If vitalism, being an exigency, is vague and unformulated, mechanism, being a method, is strict and imperious (Canguilhem, 2008: 62).

14 For Leroi-Gourhan, technologies externalize memory in addition to liberating organs.

15 According to Kapp, technologies (specifically, tools) externalize the body's organs; for Kapp, there is a morphological linkage between the organs inside one's body and the tools mankind crafts.

16 Kapp writes that:
As the human being makes use of the objects ‘at hand’ in its immediate vicinity, the first tools appear as extending, strengthening, and intensifying the human being's bodily organs. If, therefore, the natural hammer is the forearm with clenched fist, perhaps reinforced by a stone clasped in the hand, then the stone attached to a wooden shaft is its simplest artefactual after-image. For the shaft or the handle is an extension of the arm, the stone a replacement for the fist. Our reflections are limited here to a selection of figures belonging to the group of hammers, axes, and their nearest forms from the Stone Age, on the basis of their illustrative significance (Kapp, 2018: 36).

17 Marx roots this in human social relations, which become objectified via commodities. Feuerbach sees this as within the ambit of human self-consciousness and Marx sees this as human practice (i.e., social production).

18 Stiegler defies Hegel here by retaining the notion of a looming pre-existing external substance and identifying technical with outpouching some original and vital source, such that Spirit is something that has to be reclaimed. He uses the term “negentropy” to articulate this but, given the term’s origination in thermodynamics, where it has a very specific meaning, we will avoid using Stiegler’s term. More broadly, this paper seeks to strike a secondary concern: Stiegler is not only a traitor to Simondon but also to Hegel, despite following from a Hegelian lineage of philosophers of technology.

19 For Hegel, ‘[t]he concept is free because the identity that exists in and for itself and constitutes the necessity of substance exists at the same time as sublated or as positedness, and this positedness, as self-referring, is that very identity’ (Hegel, 2010: 513).

20 One could also see the Hegelian Master-Slave dialectic as a prosthetic relationship. For the master, the slave serves as the site of veridiction, speaking ‘truth’ only via instruments of veridiction (i.e., instruments of truth-expelling, instruments of torture). Here, the conception of political power is conceived of as pure affect; the master constitutes himself as self through the virtual embodiment and the disembodiment of slave in imposing the will. The slave thus serves as an archive for the master, as the slave’s body functions as a memory substitute (hypnanimata)—the archival prosthetic, a supplement and archive of power (esp. Foucauldian power, where power is understood as a site-specific space of contingency by way of spatialization). One could also further note, recalling the mirror-stage in psychoanalysis, that the Hegelian master seeks recognition from slave, constituting himself by turning the slave into as mirror-device for master and, thus, further engaging in artefact/prostheticizing the slave.

21 For Hegel, the acting self and absolute spirit come into synthesis for human expressions such as but not limited to art, religion, and philosophy. For Kapp, tools and instruments allow for such human expressions to actualize into becoming.

22 For Brassier, this is a mistake: there is no self-relation uncontaminated by estrangement and only retrospectively through history can we discern between what compels us to be free and alienation. The estrangement of history is what befalls us and thus prevents us from being in complete possession of us.

23 One of the most apparent weaknesses of this rendering is that, as a consequence, metalanguage is not foundational for spoken language but simply understood as a technic proper once it is externalized. Consider Stiegler’s following remark:

Today, Chomsky […] distinguishes innate language, which he also calls private language, or I-language (for ‘internalized language’), from cultural languages, E-language (for ‘externalized language’). This kind of notion is what leads Jerry Fodor to refer to what he calls ‘mentalese’. And it is a catastrophe […] I myself consider that language, just like writing, involves a recoding of prelinguistic cerebral functions (communicational and cognitive—for example, categorization functions), but that language nevertheless did not exist prior to this recoding. As for ‘private language’, it is an internalization by psychic individuation along a circuit of transindividualization.
that is originally social [...] The writing of which Wolf speaks is a more advanced form of that placing into exteriority that lies at the origin of language—an advanced form that changes language itself. But this is possible only because language is an originally social system founded on the artificial organ that the ‘word’ already is. (Stiegler, 2020: 218).

Stiegler thinks that the distinction between private and external language is ‘catastrophic’ because sociality precedes any idea of internalization. Yet, ‘mentalese’, or the language of thought, is never independent from socialization in its acquisition. Stiegler conflates the conditions for genesis of language with the conditions of its reproduction, as if Fodor thought that one could learn ‘mentalese’ in a vacuum. Stiegler is seemingly taking issue with the fact that ‘mentalese’ expressions are analogs of sentences and the syntax of spoken languages, claiming that Fodor takes what is a social artefact as a natural kind (i.e., the word). For Fodor, however, thought precedes spoken language and is not prior to thought. Thought is more primitive than discursive cognition and has a syntactical structure which mirrors some formal languages and much of natural languages. Stiegler, in, subordinating psychic individuation to techno-social individuation, unwittingly ignores the discursive experience of giving and asking for reasons in language games.

24 The Nanjing Lectures (2020) were published after The Age of Disruption (2019), but the former are comprised of a series of lectures given between 2016-2019.

25 Stiegler terms this process of losing access to the knowledge that allows us to exist as rational agents collaborating and self-organizing from our labor (‘savoir faire’) as ‘proletarianization’, which results in us becoming dependent on consumption and compensation to have a meaningful life (‘savoir vivre’).

26 While Hansen talks about Google PageRank and data analytics companies, he does not actually parse the protocols in question nor their training logic.

27 Throughout his literature, Stiegler speaks of ‘retentions’, whereby ‘primary retentions’ are sense perceptions, ‘secondary retentions’ are memories, and ‘tertiary retentions’ are media (culture mnemonics, which are further bifurcated into ‘analog tertiary retentions’ and ‘digital tertiary retentions’). Stiegler, however, does not give us a theory or logic of complexity, such that we do not know when or what makes a media ‘digital’ in comparison to the ‘analog’. This is rather determinantal to his system, as Stiegler subordinates psychic individuation to techno-social individuation, and, therefore, ‘secondary retentions’ (memory) to ‘tertiary retentions’ (artefacts). Other philosophers, such as Reza Negarestani, have remarked upon the how iterative computational construction is inherent to digitization, where digitality is a byproduct of deletion that is followed by generative supplementation. That is, digitality asserts its own logic of discrete systems that engage in Negarestani recalls that the domain of the digital is that of mechanizability, realized by deletion: ‘discrete inputs, discrete states, and discrete outputs’, whereby ‘what is erased […] has to be replaced by new supplements—even the figure loses something but also is supplemented with new lines and diagrammatic configurations […] the shift from the analogue to the digital should be regarded as a veritable worldmaking. In this process, continuities are deleted’ (Negarestani, 2018: 430). Rather than understanding ‘the digital’ as merely electronic machines and networks, as Stiegler seems to indicate, Negarestani (as well as others such as Alan Turing and Giuseppe Longo) have defined it as a system which reproduces itself/its rules and can be amended functionally, such that any in-world encoding has a system-wide effect, which ends with homeostasis.

28 Heidegger, along with Derrida, is a primary philosophical influence for Stiegler (in treating technology as an epistemological rupture).

29 Such relational study is central to Heidegger and his enumeration of technical objects such as the tractor in the field or the hut in the Black Forest.

30 Hart, a computer scientist, was an acquaintance of Simondon who wrote the preface for Ninian Mellamphy’s previous unofficial translation.

31 For Graham Harman, the Heideggerian disposition in which objects withdraw from our epistemic and practical grasp serves as an ideal model for the noninteraction of all objects with one another in zero-sum terms. Harman’s typology of change is directed towards functional ends, with an object either acting towards or against the system’s end. Contra Simondon, for Harman ‘vicarious causation’ bars direct influence between entities/manifest qualities. For Harman alteration is a zero-sum game of drastic transformation or gridlock, after which change is barred. Therefore, Harman’s necessitarian conception of stochastic transformation is accompanied by a subsequent non-initial theory of immunity. Harman’s ontological argument for change maintains that change is only possible in a finite number of occasions and, in such instances, transpires in an extreme sense.
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egained upon the modalities of aesthetic thought, which allows for a mediated relationship between technical objects and their function.

For Simondon, invention is key, as it will serve as the socio-political beacon for his conception of the man-machine relationship; Simondon ultimately seeks to demonstrate how we can achieve a relationship that goes beyond the terms of Marxist alienation. In re-inscribing the technicity of knowledge, it is, for Simondon, the purview of philosophical thought to see the formation of a becoming-aware that builds upon the modalities of aesthetic thought, which allows for a mediated relationship between technical objects and their function.

According to neuro-inferential models such as Predictive Processing, ‘best’ predictions are understood as those which enable control and homeostasis under a broad repertoire of perturbations, underscoring the functional boundary between controller and environment.

Jean Piaget is a common point of reference for many second-order cyberneticists and Simondon. Remarking upon radical constructivism and radical constructivists, von Glasersfeld notes that:

They have taken seriously the revolutionary attitude pioneered in the 1930s by Jean Piaget, the Swiss founder of cognitive psychology. This attitude is characterized by the deliberate redefinition of the concept of knowledge as an adaptive function. In simple words, this means that the results of our cognitive efforts have the purpose of helping us to cope in the world of our experience, rather than the traditional goal of furnishing an ‘objective’ representation of a world as it might ‘exist’ apart from us and our experience (1991: xiv).

Here, in addition to Norbert Wiener, Simondon is referring to Claude Shannon, Ralph Hartley, and Ronald Fisher (whose surname he spells as ‘Fischer’). There does seem to be an inaccurate conflation at play here as, for Wiener, information is a measure of degree re: organization in opposition to entropy (where entropy measures degree of disorganization; that is, for Wiener information is negentropic). For Shannon, information is the measure of degree of incertitude, or redundancy.

Here, Puntel deals with moving from intelligibility as the fundamental immanent structural characteristic of the dimension of Being by enumerating on the universal coherence of the dimension of Being (where coherence deals with positive interconnections/systematicity) and universal coherence as universal structuration. For our purposes, we apply this structuration to Simondon’s conception of communication and individuation.

For example, given the history of evolution, Simondon describes evolution as a process of individuation; however, he is not interested in offering/adding a supplementary history of evolution—with Deleuze, the virtual is the potential of not simply one unique process (despite this process is, according to Deleuze, the process of ‘becoming’) but a process of actualizing various different processes. Of course, Simondon is an extremely critical source for Deleuze, but Simondon more directly informs when and how Deleuze describes actual processes—how beings co-hold or modify themselves as part of a machinic ontology, or how beings-cum-machines modify their reciprocal relations as they co-determine themselves.

Simondon’s notion of a pure genetic field tracks with William James’ radical empiricism, where the world of pure experience is a world without subject or object (Henri Bergson has a similar conception of the field of pure experience). It is on this plane that, for James, division takes place and distinctions may be constructed. The plane/world of pure experiences is, for James, how the neutral point of the present is constructed. For Simondon and James, the instant field of the present is always experience in a ‘pure’ state, where the point of pure present whose thought does not belong to consciousness is separated from consciousness. Similarly, C.S. Peirce’s classification of signs which only makes sense in light of semiosis, the function that the sign may perform; just as forms are always derived from a function that produces them, the signification of the sign is tied to the action of the sign.

As readers of Deleuze may note, this will be most important for Deleuze’s project. Deleuze—throughout his oeuvre—rigorously attempts to avoid the priority of forms/concepts over reality (contra Platonist internalism). Deleuze’s project is committed to demonstrating how concepts are created and produced with respect to processes of individuation which occur in reality. For both Simondon and Deleuze, there are no a priori concepts which are imposed onto matter that are used to order or create order but, instead, concepts emerge as a consequence of differentiation of matter.
This is a dialectic only in the formal sense, but it does not move through historical stable oppositional positedness.

The process that Deleuze calls ‘differenciation’ roughly corresponds to Simondon’s individualization; both are working against the Aristotelean model of ‘potentiality’ as for both, actual difference has a ‘creative capacity’ of its own, which Aristotle’s conception of ‘potentiality’ does not; differenciation in Deleuze and individuation in Simondon is physical, corresponding to a distribution of singular and remarkable points. As Ray Brassier remarks, these points become incarnated in a physical partition or a biological specification. Individuating difference is ‘the disparate’ or the dark precursor as differentiator of difference; the disparate generated by ‘the disparity’ of intensive difference. Ultimately then, individuation determines actualization, which unfolds according to the fork in being between expressing thought and expressed Idea. This fork is a function of the nature of intensity as enveloping and enveloped (Brassier, 2007: 174).

Alain Badiou describes differenciation vs. differentiation by noting that:

[...] whereas differenciation determines the virtual content of the Idea as problem, differenciation expresses the actualisation of this virtual and the constitution of solutions (by local integrations)....Differenciation itself already has two aspects of its own, corresponding to the varieties of relations and to the singular points dependent upon the values of each variety. However, differenciation in turn has two aspects, one concerning the qualities or diverse species which actualise the varieties, the other concerning number or the distinct parts actualising the singular points. For example, genes as a system of differential relations are incarnated at once both in a species and in the organic parts of which it is composed (Badiou, 2000: 110).

Differenciation, like actualization, deals with discontinuous spatial structures; the differentiated problematic structure, different in kind to differenciated solutions, constitutes the domain of the actual. The genesis of determinable ideas, moving from differenntiated to differenciated, from problem to solution, therefore moves from the virtual to the actual. One of Simondon’s main influences on Deleuze is in distinguishing concrete actualizations of ‘Ideas’ by way of a distinction that makes and can be determined as difference (of difference).

As readers of Deleuze may note, Deleuze’s project is very compatible with Simondon’s here, for Deleuze shows how concepts emerge within such a process of becoming—within this process of individuation. However, one point of distinction is critical: for Deleuze, the virtual is much more akin to Bergsonian virtuality—the virtual as a kind of past in its being a condition of a process (it is the past of a process, a condition or the being of a condition outside time). The virtual in Deleuze is an atemporal condition of a temporal process; this is why it is called Aion, or the time of eternity. In Simondon, there is no such conception of the virtual. Although Simondon engages with vitalism to some extent, recalling Bergson when he speaks of ‘potential energy’ and ‘actual energy’ (for instance, in his detailed study of transducers), this strategic implementation is more so in order to describe how there is homeostatic modulation in energy transference with such machines (e.g., Ashby’s homeostat). There is no reason we cannot do away with Bergson’s vitalism and codify Simondon’s description of thermodynamic or homeostatic machines’ moving from one state of constrained equilibrium to another via external manipulations.

Note: although he does not rely upon it and only mentions it once, Simondon does recall Kapp’s gesture when he states that ‘for the tool is an extension of the organ, and it is carried by gesture’ (2017: 130). Nonetheless, rather than tracing a biotic-morphological schema between the tool and the organ (as is the case with Kapp) Simondon’s interest is more so in the organ as part of a complex system of organizations and this is not how he sees the machine. For Simondon science must be constructed on ‘energetics and not just on a morphology’ (2020a: 696). Elsewhere, Simondon makes a distinction between tool/instrument and machine:

the tool is at once tool and instrument, which is to say a means of action prolonging the organs and a channel of recurring information. The machine, on the contrary, as a complete closed individual, replacing man, generally has no system of self-regulation: it goes through the motions of stereotypy of successive gestures according to a predetermined conditioning. The first type of machine is what one could call a mechanical being without self-regulation. It is indeed a practical technical unit, but not a technical individual strictly speaking (2017: 139).

Note: in this remark re: the machine without self-regulation, Simondon has in mind Wiener’s conception of the machine-as-automata (without reference to interiority/auto-poiesis).
The heuristic in question is a perfect knowledge of the game’s (i.e., Go’s) rules; as we will further detail, the ‘Monte Carlo’ tree search algorithm (the ‘engine’ of AlphaGo Zero, allowing for rapid-action value estimation) does not need a supplementary heuristic function (there is no need for domain-specific knowledge).

Interceptive predictive coding’s inference similarly utilizes prediction-error. This description is viable for homeostatic behavioral systems writ large. Consider how: blood sugar levels (an essential variable) fall towards or beyond viability thresholds, reaching unexpected and undesirable values …. Under interoceptive inference, the following responses ensue. First, interoceptive prediction error signals update top-down expectations, leading to subjective experiences of hunger or thirst (for sugary things). Because these feeling states are themselves surprising (and non-viable) in the long run, they signal prediction errors at hierarchically-higher levels, where predictive models integrate multimodal interoceptive and exteroceptive signals. These models instantiate predictions of temporal sequences of matched exteroceptive and interoceptive inputs, which flow down through the hierarchy. The resulting cascade of prediction errors can then be resolved either through autonomic control, in order to metabolize bodily fat stores (active inference), or through allostatic actions involving the external environment (i.e., finding and eating sugary things) (Seth, 2015: 24).

Simondon’s ‘transduction’ is:

in contrast with induction and deduction, which do not have the status of being but are strictly logical relations exterior to the preexisting terms that they link up….an individualizing movement of knowledge, but also a movement of being, transduction is a form-taking in conjunction with the energetic discharge of the metastable system that is revealed as being more than unity and more than identity (2020a: xxiii).

Given that Carnap and Simondon share an epistemological program of empiricism—where both philosophers’ empiricism passes through a rationalist bottleneck (with Carnap’s rationalist program transpiring towards the end of his career), the fact that we can construct a bricolage by way of emphasis on the structural descriptions of our knowledge and objects vide their environment should serve as no surprise. Simondon upholds an objective structure, but solely as this pre-individuated objectivity is constituted by way of the transformation of structures; in the last instance, Simondon’s philosophy leans toward experience, knowledge, and the concrete. Much like Simondon’s rejection of that which is absolutely true, preferring that which is instrumentally true (i.e., solving a specific problem), we have a similar idea in the Carnap of 1963, wherein the ‘conception of the tools we use to choose tools are chosen in the same way and with the same tools that we use for object-level choices among goods or bets’ (Carus, 2017: 167). Undoubtedly, however, Simondon is more sympathetic to metaphysics than Carnap.

As Link Swanson remarks:

The top-down signals instantiate a generative model—a matrix of possible causal structure—which ‘predicts’ the causes of current sensations as it flows downward along the ‘backwards’ or ‘feedback’ anatomical neural pathways. Simultaneous with this top-down generation of predictions is a bottom-up neural signal flow against which the predictions are ‘matched’ or ‘checked’ (sometimes called a ‘recognition model’) and which flows along the ‘feedforward’ neural connections. (Swanson, 216: 7).

In Homo Deus: A Brief History of Tomorrow (2018), Yuval Harari uses the term dataism to describe the phenomenon of data-fetishism/fundamentalism, where data processing systems take on the theological effects of blind worship.

As Andrew Pickering details in his book, The Cybernetic Brain (2010), the idea of the cybernetic machine was shaped after the adaptive theory of the brain. This was particularly the case with first-order cybernetics, with researchers designating the function of the brain organ as not a representation of but a means to understand processes of adaptation to the external environment. Understanding deep learning not only as a machine of cognition but one that operates with a logic similar to synaptic processes serves as highly valuable in understanding predictive patterning.

Hebbian learning is an example of reciprocal modulation regulated by functional activity; here the synaptic connections formulate over time and are a byproduct of how the strength between two neurons increases if their activity is correlated (and decreases if it is uncorrelated; Hebb’s law is often summarized with the adage: ‘neurons that fire together wire together’).
AlphaGo Zero utilizes deep neural networks and heuristic search algorithms, specifically the ’Monte Carlo’ tree search for searching through its strategic space when making decisions re: choice of play; AlphaGo Zero operates as a tabula rasa, and has been touted as ’superhuman’. Notably, it is: …trained solely by self-play reinforcement learning, starting from random play, without any supervision or use of human data. Second, it uses only the black and white stones from the board as input features. Third, it uses a single neural network, rather than separate policy and value networks. Finally, it uses a simpler tree search that relies upon this single neural network to evaluate positions and sample moves, without performing any Monte Carlo rollouts. To achieve these results, we introduce a new reinforcement learning algorithm that incorporates lookahead search inside the training loop, resulting in rapid improvement and precise and stable learning (Silver, 2017: 354).

The ’Monte Carlo rollout’ (also called ’simulation’) in question refers to the phase in which random actions are taken by the network to retrieve a landing state before another random action is taken in order to land in a new state. This process is iterated until a terminal state is reached. The terminal state contains a result (value) that is seeded upwards into the backpropagation phase, which updates the previous nodes by adding this result to their value, increasing the count of visits at each node. Such is the iterative relationship between selection and expansion in deep learning. The Monte Carlo tree search is crucial to such deep neural networks, providing sufficient numbers of parameters for algorithms like AlphaGo to conduct complex computations with (and, according to some, surpassing) human-level intelligence on specific tasks. This is achieved by its reduction and learning capacities in decision spaces and searching processes. Given our Simondonian frame, we ought not to overlook how critical the CPU and GPU are with large-scale parallel computing.

Bernhard Rieder remarks that ’…computerization rather than datafication emphasizes that data accumulation enables forms of ’immediate’ management that operate through interface modulation. The direct application of algorithmic ordering is made possible by the emergence of digital infrastructures and environments that allow for both data collection and output generation in the sense that the structure and content of what appears on a screen or some other interface can be compiled in real time on the basis of data that may have been collected over extended periods of time’ (2020: 36-37). ’Computerization’ as such refines Simondon’s conception of technics, treating algorithmic information-ordering as inseparable from principles of design/architecture. Similarly, we ought to not neglect the social imperatives born out of social media platform capitalism. Given Rieder’s fondness for Simondon, his attentiveness to such facets should serve as no surprise.

Apart from game rules and conditions, the ’Monte Carlo’ tree search algorithm (which consists of four phases: Selection, Expansion, Rollout/Simulation, Backpropagation) does not need any previous informational inputs such as strategy or tactics.

Rieder details the example of spam filtering where ’building its model from the very first classified email and every additional act of labeling will produce an imprint while leaving room for future adaptation’ (2020: 245).

This is done by way of tf-idf (term frequency-inverse document frequency) where the frequency of a term in a document and its rarity in the collection are used to calculate its weight, which orders information according to statistical specificity by calculating feature distribution over a full collection of data, weighting different features to identify and project statistical horizons. Such term-weighting schemes add discriminatory power to information-and-retrieval modalities.

Stiegler notes how ’… a new social hierarchy could be constructed, based on a new stage of exosomatization, characterized in particular by the re-interiorization of exosomatic organs’ (2020: 314).

Butler remarks that:

Is it not plain that the machines are gaining ground upon us, when we reflect on the increasing number of those who are bound down to them as slaves, and of those who devote their whole souls to the advancement of the mechanical kingdom? […] what an army of servants do the machines thus employ! Are there not probably more men engaged in tending machinery than in tending men? Do not machines eat as it were by mannery? Are we not ourselves creating our successors in the supremacy of the earth? (Butler, 1872: 201).

For Leroi-Gourhan:

Mechanical automation, from the mechanical brontosaurus of the nineteenth century rolling mill to the automatic pilot of today, represents the penultimate possible stage of the process begun by the Australanthrope armed with a chopper. The freeing of the areas of the motor cortex of
the bram, definitively accomplished with erect posture, will be complete when we succeed in exteriorizing the human motor brain. Beyond that, hardly anything more can be imagined other than the exteriorization of intellectual thought through the development of machines capable not only of exercising judgment (that stage is already here) but also of injecting affectivity into their judgment, taking sides, waxing enthusiastic, or being plunged into despair at the immensity of their task. Once Homo sapiens had equipped such machines with the mechanical ability to reproduce themselves, there would be nothing left for the human to do but withdraw into the paleontological twilight. (Leroi-Gourhan, 1993: 248)

In the sense that they could be had without having another concept, or that they are self-justified in the sense that they could yield knowledge irrespective of other claims within an inferential procedure in which they play a part as premises or inferences for theoretical reasoning (Sacilotto, 2020: 150).

We have detailed the PP model with great conceptual care, particularly with close regard to how training and empirical data are involved because, aside from Bernhard Rieder’s *Engines of Order* (2020), media theory/archeology has not yet adequately dealt with training data, probabilities, and Bayesian epistemologies.

For Kant, apperception corresponds to spatialized representation and is part of a tripartite mold consisting of: i) the apprehension of unity (simple intuition); ii) reproduction of unity in the imagination (distinction and juxtaposition); iii) summation, by which the self represents to itself a multiplicity in space.

Simondon has a surprisingly similar critique of the Kantian *a priori* to Carnap: …we cannot deduce as definitively as Kant a relativism of the existence of *a priori* forms of sensibility. If noumena are indeed not pure substance but also consist of relations (like exchanges of energy or passages of structures from one domain of reality to another domain of reality), and if relation has the same status of reality as the terms themselves, as we have tried to show in the preceding examples—insofar as relation is not an accident relative to a substance but a constitutive, energetic and structural condition that is extended in the existence of constituted beings—then the *a priori* forms of sensibility that allow us to grasp relations because they are a power of organizing according to succession or according to simultaneity do not create an irremediable relativity of knowledge (Simondon, 2020a: 75-76).

Hansen’s analysis of feedforward loops that mediate the data of causal efficacy via relativity takes a similar approach to the topic of subjectivity and media-operationalization. Hansen terms ‗desire‘ what we have ascribed via pattern-recognition vide PP (Hansen’s project is more phenomenologically cultivated and centers around ‘data of sensibility’). Regardless of terminology, both frameworks show how the operation of speculation is brought into experience, dealing with deliberate decisions-making techniques. Hansen achieves this through Whitehead’s account of process: 

Like Whitehead’s account of the incessant oscillation between concrescence and transition, every act of accessing the data of sensibility is itself a process that creates new sensibilities—sensibilities that are, in turn, added into the extant data of sensibility. This process of data propagation of sensibility perfectly captures the way that potentiality (Whitehead’s ‘real potentiality’) correlates with the superjective dimension of process: far from being an inert source for computation, as it is often understood to be, data is quite literally teeming with potentiality, and specifically, with potentiality that—though part of the settled world—has a speculative relation to experience understood as the experience of consciousness. That is why, as we shall see shortly, data-mining and data analytics do not simply calculate a preexistent space of possibilities, but literally create new relations and thus new information (new data) as a result of their operation (Hansen, 2015: 142).

**Ekin Erkan** is a Turkish philosopher working on the intersections between philosophy of mind, computation and aesthetics, with a penchant for German Idealism. Erkan’s most recent work, collapsing distinctions between continental and analytic traditions, has been associated with the neo-rationalist turn of Ray Brassier, Carl Sachs and Reza Negarestani. Negotiating immanence, expressivism and rationalism, Erkan’s work often draws upon and
juxtaposes sources such as Rudolf Carnap, Hilary Putnam, Link Swanson, Andy Clark, David Chalmers, Tristan Garcia, Alain Badiou, Robert Brandom, Johanna Seibt and Mark Wilson. Erkan’s most recent work has been published in journals including Review of Metaphysics, The Journal of Value Inquiry, Radical Philosophy, Theory & Event, New Formations, Cosmos & History, and The New Review of Film and Television Studies.

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Data Quirks and Impressions:
An Interview with David Beer

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Abstract

David Beer is a Professor of Sociology at the University of York. He is the author of seven books and dozens of articles that encompass the culture and politics of new media, data, and technology. His most recent works have focused specifically on the implications of data analytics industries and the social power of metrics to govern everyday life. David sits on the editorial boards of several key journals in these fields, including Theory, Culture & Society, Information, Communication & Society, Cultural Sociology, and Big Data & Society. His work has made significant contributions to advancing contemporary understandings of new media cultures, as well as the histories and philosophies of social theory, such as his most recent works on Georg Simmel. This interview examines some of the underlying rationales and approaches to David’s work. We focus on key themes of ‘quirks’ and ‘impressions’. The interview looks at how data analytics industries imagine and actualize specific kinds of relationships between populations and data, and how these relations are subsequently ordered for value production. We discuss how platforms and data analytics industries negotiate the rules of social interaction in a context of cultural eclecticism. Finally, we discuss how art and popular culture can guide the creative process for academic research and writing.

Keywords

Data analytics, Classification, Digital Culture, Platforms
Preface

How do we analyze something that moves faster than we do? This was a question asked in 2007 during the emergence of major social media platforms and web 2.0 applications, but still remains relevant for media theory today (Beer and Burrows, 2007). It is important to reflect on what social theory looks like in a context defined by variegated ‘crises’ of sociological knowledge and the acceleration of data analytics in everyday life (e.g. Savage & Burrows, 2007; Gane, 2011). Central to this is what happens as knowledge assembles into specific cultural practices of data production and consumption, and how these practices interface with the rise of big data analytics, commercial sociology, and ‘Knowing Capitalism’, a precursor to discussions of ‘Surveillance Capitalism’ today (Thrift, 2005; Zuboff, 2019). The conflicts between the speed of academic output and technological change pose serious questions for media theorists. What becomes of analytical knowledge? Should we try and ‘keep pace’ with technological change? How do you study a field characterized by disruption, eclecticism, and speed? Will technology be necessary for doing theory?

David’s work has sought to negotiate these questions to understand the social and cultural implications of data-driven capitalism on mundane cultural practices and social relationships. This has included an analysis of how digital media transforms the production and consumption of cultural objects, collective practices of genre building and indexicality, the disciplinary authorities of metrics and measurements in everyday life, and the cultural imaginaries of data and algorithms in contemporary organizational structures. These works are considered essential reading for researchers at the intersection of digital media and society, and in many respects have been crucial to setting the agenda for sociological theory in digital culture.

We could cluster David’s work thematically into a ‘loose trilogy’ of interrelated digital cultural processes and practices: archiving, measurement, and analytics. These practices broadly encompass important practices of the production, distribution, and consumption of cultural artifacts that influence the social shaping of symbolic resources. This includes the ways cultural artifacts are identified and classified into databases and platforms, the inscription of performance indicators and transactional knowledge into metrics and cultural archives, and the development of analytical
modes of knowledge through data analytics industries. These aspects reflect larger changes in the political economies of information and surplus extraction that govern systems of value production through metrics and data analytics. At the same time, while data analytics are deeply sunken into the organizational logics of contemporary organizations and businesses, they are also part of everyday cultural practices, and the ways we make sense of media and culture.

This interview reflects on some of these key themes of David’s work and is oriented around a discussion of some of the ‘quirks’ and ‘impressions’ that have emerged in doing media theory in a time of platform capitalism and data-driven everything. We focus on David’s most recent works in theorizing data analytics industries, including The Data Gaze and The Quirks of Digital Culture, to stimulate a general discussion of some of the larger theoretical and epistemological debates about how data intersects with the mundane aspects of living in digital cultures, as well as the larger social imaginaries and promises that guide how we internalize and value data analytics, and to speculate on future research agendas of an industry governed by speed and disruption.

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**Harrison Smith (HS):** Given the journal’s focus on media theory, I was wondering if you could start by explaining some of the key theoretical influences and issues that have been guiding your work on data analytics (Beer, 2017; 2018; 2019). Could you say something about how you see data analytics shaping future theoretical discussions about media theory?

**David Beer (DB):** It seemed to me that there were some gaps. You have people theorizing data developments, the power of data, and their interfaces with algorithms. But it seemed to me that one of the things that was needed was a theory and concepts that could be used for analyzing data analytics. It was a gap between data and the effects of those data. This is where some theory needed to operate. So I was thinking what are the kinds of mediation and mediators of these systems. Data transform the world, so I was thinking about those processes of transformation and how data are operationalized, how they are deployed, how people turn data into knowledge that can be applied for decision-making. It was those things I thought we
need to start conceptualizing; we needed some further theoretical encounters with the kind of data analytics that were going on. I was also interested in the emergence of a whole industry of analytics that had occurred off the back of the expansion of data accumulation. Once the data started accumulating people felt like they should be doing something with it. Off the back of that then this data analytics industry began to expand. It seems to me that there was a need for media theory and cultural and social theory to get to grips with those in-between stages: data turned to knowledge, data turned to decision-making, data feeding back and transforming the social world.

**HS:** It seems that there's an emphasis right now on studying platforms and developing case studies around specific platforms. This can be things like social media, gig economies, or surveillance capitalism (Zuboff, 2019). So you’re looking more at what’s happening at the back end of these services, or how these companies make specific claims of delivering value to platforms?

**DB:** So analytics can be within the platform, on the platform or outside of it. Analytics goes beyond thinking about platform capitalism in the form of larger tech companies to include smaller organizations and organisational structures. This includes how data are conceptualised as well as how they are used. This is also to think and account for the ways that data analytics start to stretch into and spread into lots of different parts of the social world. Part of the story is about how data analytics spread through the social life of platforms, but it’s also broadly about how data become embedded analytically in organisational structures and everyday lives. When I started working on this it wasn’t being conceptualized as platforms at the time, other terms were being used, but that kind of terminology has emerged while the research was ongoing. We now talk in terms of platforms much more than we were only a few years ago.

**HS:** How would you describe data analytics and why is it important to look at it, especially for media scholars?

**DB:** The concept of data analytics varies and has been made and remade in lots of different ways, but in large part it’s to do with the way that the accumulating data and abstractions about the world are then utilised so that they turn into data visualisations or different kinds of outputs, findings or insights that are then used to
inform decision-making. These are processes where data are used to inform or transform something. So the data is analyzed to try to create findings or insights about the way the world is, about people, about social groups, about organisational structures and about customers, and so on. It could be all sorts of things. The aim of these analytics is often to try to find underlying patterns about what’s going on or about hidden values. This is one of the things people are trying to find out about by using different analytical techniques, to find and discover things that could be useful in decision-making.

**HS:** Do you think that data analytics can be likened to a new kind of sociological enterprise? You’ve talked about this in other works relating to larger changes in empirical sociology; do you see something happening like this in relation to data analytics?

**DB:** With the emergence of this new kind of data, and lots of it, then the question becomes one of trying to understand the political dynamics of this emergence. This is where *the analysis of data analytics* comes in. In terms of trying to understand how data becomes part of the social world, and the political dynamics of that. On the other side you’ve got how you can do social research using those data forms, and how you might use new types of data analytics to see the social world differently. So there’s kind of a set of methodological questions that are being posed as well. I’ve looked into that a bit in the past, but others have done far more than me. This is an approach where a social scientist might try to think about how they can develop new types of social research that draw upon commercial forms of data and data analytics to try and see the social world in different ways. There was always this branching off effect, but the two sides should always be connected. You have the kinds of methodological questions being posed but also the political questions that these developments present.

**HS:** Your book is called *The Data Gaze* (2019), but you’ve also written another article about ‘envisioning’ the power of data analytics (2018). This is a theme I want to quickly pick up on as you used this idea of engaging with different modes of perception about data itself or data analytics itself. Can you say a little about why you chose to approach it that way?
**DB:** The first set of questions I was interested in when looking at data analytics was how data analytics are being constructed, created or imagined by the industry responsible for it. How it’s being envisioned seemed to be an important step in understanding its application. *The Data Gaze* starts with that envisioning and the data imaginary and then looks at how that plays out in different infrastructures and practices in the second half of the book. That book tries to think those connections through in greater detail. It seemed to me that the kind of underpinning logic or rationale of data analytics was important to understand, particularly if you want to understand how it spreads or pushes back the data frontiers (as I call them in the book). You need to understand the sorts of promises or ideals that are projected onto data and analytics to understand how they move out onto the social world.

**HS:** It seems also that there’s a connection between that and how we understand the inherent value in terms of how it’s socially constructed as meaningful. This could also connect with sort of the larger ‘hype machine’ that’s associated with new startups and Silicon Valley tech culture. Do you think that data analytics industries are being perhaps ‘over-hyped’ or will now be the new normal in terms of how these companies use data to inform decision-making?

**DB:** It already is ordinary. Some of the ideals about data and analytics have already spread out into most organizational structures and have become embedded in them in different forms and to different extents as well. Some are highly data-focused while others may use them for more routine forms of management or for trying to understand performance management, the marketplace, their customers, and logistics. They’re all deploying the data gaze in different forms. How successful data analytics will be, however, will vary depending on the uses and what people think they will get out of them but it seemed to me that there’s a set of ideals and imagined promises that would never be reached. They’re like a horizon that people work towards. In that sense there’s this future set of possibilities that usher in a cruder version of analytics in the present. Data analytics promises perfect decision-making, or a perfect kind of organization, efficiency, and performance that is never reached but which shapes behaviour in the present. They’re almost like a disappearing horizon that you’re always chasing that data analytics can find spaces to spread into as a result of those promises.
HS: So they reproduce their own legitimacy within the market and social imaginary? You now have companies like General Motors for example saying that they’re increasingly going to see themselves as data companies, especially with the rise of new technologies such as autonomous vehicles. Likewise advertising industries are seeing themselves as data-driven rather than relying on theoretical constructs when deciding who to target.

DB: It’s part of how an organization presents itself as forward-looking and dynamic and all these sorts of things, to attach themselves to data analytics and to try to show what they can produce. So being data-focused and data-informed can be part of how you project a sort of dynamism, forward-thinking, objective sort of image. All these things can be used to be part of the branding of an organization separate from what data analytics actually achieve.

HS: You’ve been quite busy publishing several books recently around data analytics and metrics. Is there a sort of larger sense of continuity, or goal, especially in regards to advancing media theory?

DB: There’s this idea I borrowed from William J. Mitchell of a ‘loose trilogy’. So there are three books dealing directly with data circulations. There is Popular Culture and New Media: The Politics of Circulation (2013), which is about how data circulations change culture. Then Metric Power (2016), which is about how data circulations play out in power formations and political dynamics in everyday life. Third, The Data Gaze (2019), which is about how circulations of data are mediated by analysts and data analytics providers and software. Those three books are a loose trilogy where I try to look at various aspects of data circulations. It’s not necessarily obvious from the outside that these three books sit together, but it’s kind of what I had in mind. I didn’t know it’s what I was going to do at the start but it unfolded that way. So I’ve come to think about it a little like William Mitchell’s loose trilogy idea rather than a sort of grand trilogy or anything like that.

Some of the other things are a bit like me pursuing other things that I am keen to write about or learn about. I like the band the Super Furry Animals, and I like to think of books like albums. They have this thing where they try to make sure every album is different. So in a way each album, the next album, is a reaction to the last
thing they produced. That sort of happened to me a little bit. I was trying to think about what’s different to what I’ve done and that’s how the Simmel (2019) book came about because I was thinking about taking a break from data and I’ve tried to do a book on Simmel for a number of years. That was quite a sort of big production in a way, in that it took a lot of work on Simmel and then *The Quirks of Digital Culture* (2019) was a reaction to that: something short, quick, and accessible like a pop record off the back of something that’s a bit more long-winded.

**HS:** Regarding Simmel, you do mention that you wanted a change of scenery and now the sociology of media and digital culture is becoming quite data-focused so it looks like you wanted to change and look backwards; can you talk about that a little?

**DB:** I’ve always had an interest in the future and the past of social thought. Turning to focus on Georg Simmel’s writings was kind of an attempt to go to the theorists that inspired me. There is an underlying set of connections about how you do sociology. I ended up focusing on Simmel’s later works to make the project more manageable. I had started with a bigger project in mind, but I couldn’t manage it – Simmel’s work is very rich and I was struggling to make the planned book work. I changed direction to do something that focused on his late writings. It’s about the way that the world is mediated and the kind of experience we have with fragmentary sensory experiences. I found that there’s some very relevant stuff in Simmel when it comes to what’s going on in the current media political landscape. His essay on the crisis of culture from 1915 and his parallel work on the fragmentary character of modernity try to think about how people create a world out of fragments. So it’s quite interesting to think about how people’s conception of the world is built from fragments and how people can build quite different conceptions or reinforce different conceptions out of the multiple fragments you are faced with once you get a complex media environment. I also turned to Simmel because at the time I didn’t feel that I had anything more to say about data! That set of three books was done and I needed something else to focus on. So it was about thinking what would be an engaging project until I had a chance to think about where to go next.

**HS:** A lot of data analytics industries themselves do create the world from fragments of data.
DB: Yeah.

HS: Yet, some try to claim they have this totalizing view of the world, such as of a consumer’s lifestyle for example, but much of the time the data they extract is quite circumstantial and divorced of context.

DB: Definitely. Part of the reason I wanted to do the work on Simmel was because I think Simmel is quite useful for understanding what’s happening now. It’s not an attempt to do something detached, although it is a book about theory. In the preface I reflect on how Simmel was trying to ask questions about the tensions and conflicts of social life and how they play out. There’s a short essay on the future of Europe that he wrote for a newspaper, for example, and it’s still quite useful. But it’s important to think about how to work with these theorists rather than think they’ve got the answers. It’s about how you can bring things out of the texts that could be useful if you actively work with them, if you aim to find out their utility and apply them or update them.

HS: You mention the underlying notion of tensions and I think this relates to your latest work on *The Quirks of Digital Culture*, so there is in some sense a kind of continuity. So what’s quirky about digital culture?

DB: You’re right there is a direct connection, which is via David Frisby’s notion of ‘sociological impressionism’. So when I was working on Simmel I was doing *The Quirks of Digital Culture* in parallel. The idea was to do a piece of sociological impressionism about what’s going on. I had been working on that for a while. It seemed that there was an opportunity to work a bit like Simmel did. Which is where you look at different aspects of social life and try to find connections, and you look out for the way that small things reveal underlying broader issues about the way the world is. The idea of that book is that the quirks of digital culture are these strange or unusual things that almost go unnoticed but that also reveal broader processes and forces. I’ve been writing these short pieces for a while, trying to get to grips with these little shifts in media and culture; it occurred to me that these are all quirks. So I brought them together and added further detail and new content. There are all sorts of things in that book; it was an experiment. There’s a bit about the end of the Yellow Pages or, in the UK, the closure of the centre that sent postal stuff for bands
and music artists, the end of the *New Musical Express* and so on. There are all kinds of unusual things, and then it tries to think about the underlying social and cultural issues. So you take a quirk and think about the broader transformations it’s pointing towards, like pulling on a curtain. They’re like ruptures that allow you to try to see behind what’s going on.

**HS:** You’ve mentioned this a couple of times, so let’s talk about this theme of music because it does seem to underpin a lot of your work, especially how it guides your sociological imagination, and here I’m thinking of your book on *Punk Sociology*, for example (2014). Your book on quirks even comes with a Spotify playlist, so how do you use music, or just more broadly aesthetics and art to guide your sociological thinking?

**DB:** It’s about using music to provoke the imagination and stimulate creativity. It’s also about motivating me to do things. So punk sociology is about using a punk ethos to sort of guide a sociological imagination, and that book also had a playlist in the preface that goes with the second chapter. The aim of that music playlist is to give an unfamiliar reader a sense of the aesthetic and audio of punk. I also did a playlist for *The Data Gaze*, and I did one for *The Quirks of Digital Culture*. I like the idea that you can have a soundscape to the book. It goes back to coming home from the Derby City Centre with a new CD and a copy of the *Melody Maker* newspaper or something, and listening to music while reading as an accompaniment to thinking. Loads of other people have done this sort of thing. It’s not always a direct kind of thing. I might try and work an album into the style or tone of the thing I’m writing and it wouldn’t be obvious to the reader, or the structure of the book or article might relate to the structure of the song. That sort of thing. It’s music as an aid to thinking, I suppose.

**HS:** How would you describe the musical ethos of digital culture today?

**DB:** [laughs] Eclectic, really. Cultural consumption as it moves away from ownership to access… the possibilities for listening to a wider range of culture seems to me to uncouple culture from fixed categorizations and patterns of consumption towards something much less anchored and more eclectic. You’ve now got the possibility of eclectic consumption whereas you didn’t really have that before or at least not to the
same extent because you were limited by how many CDs you could afford or what was being played on the radio. So there’s much more eclecticism.

**HS:** There’s also something to eclecticism about how we come to classify culture and what happens to the nature of genre-making or boundary-drawing. When you take this in the context of the data gaze, the question becomes one of how we go about classifying culture in this context.

**DB:** Yeah, I think that’s an unresolved issue really. The transformation of classification and classification systems by the expansion of data is a really tough thing to grasp. I touch on this in *Metric Power* too, where I go through the history of social statistics to think of how classification systems make us up and how they are made up themselves and also how they become solid or fixed where they may have been contingent or loose. It seemed to me that, in the example of music and genre, I felt that sociologists were looking at genres as being too solid, and it seemed to me that there is a much more active or playful engagement with genre within music cultures themselves. There was often a kind of cut-and-shut neologism of genres all over the place, or you got umbrella genres containing dozens of smaller genres. I think that that eclecticism has played out in a much more dynamic version of categorization being made on the ground by people. It reminded me of Bowker and Star’s work on *Sorting Things Out* (2000), where you’ve got fixed categories coming up against people’s everyday categories they create for themselves. There’s something very interesting in the way these classification systems work. On the one side you’ve got all these forms of consumption where forms of categorization can be applied, but you’ve also got data analytics and people analyzing data in new ways through dashboards and other things. So you’ve got an engagement with categorization which is interesting. I tried to think about notions of archives in my past work and how you can conceptualize classification in those, but you need to think about categorisation in these different everyday consumption type settings and data analytic settings.

**HS:** It’s interesting how, for example, in marketing you have this discussion about exactly who individual consumers are on a whole new scale of precision, rather than engaging in a traditional classificatory imagination. I think there’s something going on about how power diffuses in data analytics, and the reproduction of power differences of socio-economic difference.
**DB:** I think this is about knowing an individual through data and how you know an individual through that data. Part of that is how the analytics might be looking at an individual’s data whilst using classifications and categories to make sense of what they’re seeing in the individual. There are rules, norms, indicators, and benchmarks and these sorts of things, or categories you can put individuals into. Foucault’s *Order of Things* (2001) discusses the encoded eye. You might be looking at an individual or their data but there’s a grid they can be put into. You can know an individual through the data but the way it’s made sense of is in relation to populations and other people that can be categorized in a similar way based upon what they liked or did. There’s still tensions between the individual and the category and how they work together, it’s part of the sense-making processes.

**HS:** I think we still haven’t fully explored these sense-making practices in data analytics industries because there’s so many underlying challenges around literacy, access, and how to engage data scientists around understanding their sociological background, so to speak.

**DB:** It’s like your recent piece on locative media (2019), these categorizations work on different sorts of scales. You’ve got all these different analytical scales from quite broad things down to the geometrics and postcode level and then further down to the individual level. Thinking geographically you’ve got many scales, but in terms of classification you’ve also got different scales from broad umbrella categories to quite small categories with relatively small numbers of people.

**HS:** There’s something to be said here about how these industries make particular kinds of assumptions about who you are based on the scale of data. For example, even if you’re observed in a specific location, you’re automatically assumed to be a member of a larger group of people that might frequent those locations. There’s both an increasing precision but also real-timeness that informs what your tastes and lifestyles are. It’s really interesting when these things begin to conflict like when someone is observed frequenting locations that might conflict with broad categorizations.

**DB:** You’ve got instances where the data challenges or creates problems with categories. These things are never fixed, but they do have the power to be projected
onto things. Simmel talks about boundaries. His understanding of modernity is liminal and he tries to understand people’s relationships with boundaries and limits. He says that in a lot of cases people are looking to stretch or break those limits and breach them. When categories are breached they change as a result of that. It’s possible to see that sort of dynamic, pulsating culture that Simmel points us toward in these contemporary media forms, rather than seeing them as walls that are never altered or challenged. But you’re right about the speed of it now and the push to real-time, or what Mark Andrejevic (2013) calls ‘immediation’, the pursuit of the immediate.

**HS:** Do you think that in line with what Simmel is talking about that as data analytics continues to intensify in everyday life, and awareness continues to build in terms of what platforms are doing in terms of shaping access, do you think people will try to challenge or resist this?

**DB:** They might but there are a few things that might make this difficult, including how deeply sunken data analytics already are in people’s everyday lives. The social world already functions on data. The material world already functions extensively on it too. So trying to reverse a direction already travelled – and it is still moving at quite a pace – is quite difficult to do. The other thing is you’ve got the power of the data imaginary that I describe in *The Data Gaze*, which projects all these promises. So although you might see the problems or be aware of the extent that data is being used, those powerful promises might still draw you towards increasing participation in the data infrastructure. Most of us are drawn to it, I include myself. I can get a better Spotify playlist automated for me, for example, and those things kind of draw you in. For organizations, those promises about being a kind of perfect organization makes it likely that they’ll continue down that route of increasing data-led thinking. It’s quite difficult to reverse the materiality of it. It’s even harder to redirect the ideals or promises that draw people to it.

**HS:** There’s also a quirk of digital culture in that if you talk to most people who work in marketing or data analytics, they will rarely if ever deviate from a sort of script that consumers want relevance to the most infinite degree possible. Often, in terms of power differentials, they will say that what they really need to do is catch up to the consumer to legitimate the continuous extraction of data.
DB: It’s the promise of personalization and the promise of a seamless environment in which the media you confront know you in greater detail. It’s that vision of media that are ever more predictive of what you want. That’s the kind of ‘perfect’ media environment that is embedded in the discourse that surrounds these technologies. Personalization and notions of the convenience that come with it are quite powerful in terms of encouraging participation in data infrastructures, even when people might feel uncomfortable with some aspects of it. The quirk tends to occur when it goes wrong or misjudges you. Suddenly it becomes more visible in these little moments. That could be something like a data leak hitting the news through to people being creeped out by an advert, or a shop emailing you with birthday best wishes when you don’t actually know them. In the *Quirks of Digital Culture* book I use an example of a personalized TV advert that said my name to me and spoke to me to try and sell me paint for a fence when I haven’t even got a fence. It knows enough about you to be personalized, but it still might not get it quite right.

HS: There’s a certain degree of awkwardness about it, like when you buy something on Amazon but then you keep getting served ads for that same product.

DB: It’s a social interaction and the rules aren’t necessarily in place properly, and people react differently to that level of what they know. It’s like you know you’re being watched by capitalist organisations, and that infuses different levels of discomfort but also at times different levels of comfort. That’s what the last chapter of *The Quirks of Digital Culture* discusses, that tension between comfort and discomfort in digital culture, and that we all experience it differently on these platforms.

HS: I was wondering if we could shift gears, and talk about some of your other writings, such as your medium blog. Can you talk about your motives behind this and whether you think this is something academics should consider doing more of?

DB: For a good part of the last 10 years I’ve been trying to think about how to experiment with writing and to write in different styles and forms, things like that. I’ve been blogging and writing for different outlets for most of that 10 years, and really it’s about trying to develop ideas and try out different things, or respond to things occurring in a quicker way. So it’s about being part of the dialogue as it
unfolds and finding ways to communicate ideas from other texts to different audiences. In some cases these are pieces about things in books or articles but applied to instances, events or things in the news. It’s about experimenting with how you might try writing for different audiences, but also how you might develop ideas and communicate more traditional academic ideas in relation to current events. It’s about experimenting, trying things out. And there’s a quicker feedback loop you don’t necessarily get from academic writing.

**HS:** Sometimes by the time a publication has come out, say about a platform, the whole platform has changed.

**DB:** That’s it. I haven’t got a problem with slow academic publications or anything, it’s just also good to have different outlets to try things in and that allow you to work on a different timeframe.

**HS:** I think this has been a sort of ongoing discussion that’s been going on about the tempo of academia, and here I’m thinking of people like Nick Gane (2006) who talks about whether we should speed up or slow down, as well as so many other issues about academic output.

**DB:** I think it’s about trying to find ways those slow and faster forms work alongside one another and in ways that are enjoyable and help your ideas develop. For me, I like writing different things, like book reviews for example, because it just keeps you writing and trying things out.

**HS:** One last question, and this is for early career researchers, especially those maybe interested in data analytics and digital culture; where do you see this field moving in the future and what kinds of key issues do you think need more attention?

**DB:** I think there are absolutely loads of unanswered questions. We spoke earlier about different levels of classification and categorization that happen with developments in data, and I think there are a lot more questions about power to be asked in terms of the way they structure power dynamics. I think there are a lot more questions about practice, in terms of the practices of data analysts and the way that software is used in analytics and how it shapes people’s decision-making within organizations, and also the role of these analysts in those organizations. There are
lots of questions that could be developed, and I hint at this in the *Data Gaze*. I always wanted it to be something that could work to open up questions rather than try to make definitive statements, and *Metric Power* is like that too. One of the questions that opens up in *Metric Power* concerns resistance and how people react to and resist against their exposure to metrics and data in different settings. We tend to gravitate towards workplace-type environments, but it might be interesting to think more broadly about how people understand data analytics, and try to resist how the analytics try to cajole them in different directions. I do think the really crucial thing is ideas, and trying to find and nurture ideas that see these things in new ways, or conceptualize them in new ways.

**HS:** There’s something about the volatility of these industries, and I know it’s a cliché to say that the industry is moving very fast right now, but if you look at the political economy of data industries you’re seeing lots of mergers and acquisitions, even by firms that were not previously really in the data market, so that they can sort of check off that box that lets them say ‘they’re a data company’ as well as an automotive company, for example. I think there’s something there about the speed of the industry that can frustrate doing research both empirically and conceptually sometimes.

**DB:** It’s a difficult industry to try and tie down as a kind of single entity. What I’ve found is that a lot of data analytics providers are selling software packages that allow people to become their own data analysts, or allow organizations to develop their own analytics outside of the kind of data industry as you might think about it. Its tentacles stretch out into all sorts of organizational structures where people become data analysts or employ analysts within their own organizations. So the reach is far greater than the label of the *data analytics industry* might suggest.

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**References**


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An Existential Response to
Gary Hall's ‘Anti-Bourgeois Theory’

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Abstract
Late in the summer of 2019, Gary Hall gave a series of talks hosted by the Philosophy Department at Universidad Iberoamericana, Mexico City. One of them was titled ‘Liberalism Must be Defeated. On the Obsolescence of Bourgeois Theory in the Anthropocene’. As the organizer of this event, I was curious about the reception of this argument in a context that does not usually name ‘liberalism’ as the enemy, even though it is no stranger to anti-bourgeois positions on intellectual activity. Universidad Iberoamericana is a private Jesuit college that has catered historically to the Mexican elites while upholding a reputation for its political commitments to democracy and social justice. Indeed, one could argue that it is a liberal alliance between religion and business that provides the conditions for the Philosophy Department’s younger generation of scholars to teach and write about the kind of (French, German, Italian) radical theory that Gary Hall’s work embraces and seeks to renew. While most attendants of the talk at IBERO did not at all lack the theoretical framework to understand in what sense liberalism must be defeated, or why bourgeois theory should be regarded as obsolete, I was curious about the conditions of taking Hall’s performative argument on board. Was it a critique of how successful Anglo scholars operate, or was it also about how ‘we’ operate here in Mexico City? Is ‘our’ work liberal bourgeois theory too, and therefore obsolete? If so, could we do better than appear tolerant of a disruptive performance that was challenging us to aspire to something different, something unknown, something like existing otherwise?

Keywords
Mexico, elites, writing, literature, philosophy, theory, liberalism, gender, class, racism
“The way out of discourse, the exit, is a way to safety, a poros which appears unexpectedly, which no one can be sure of finding, and which is itself always aporetic: a true miracle, an encounter with a dolphin in the mid-ocean!”

Sarah Kofman, *Beyond Aporia*

Gary Hall’s (2019) meditation on the obsolescence of ‘bourgeois theory’ in the Anthropocene begins with a story about a well-known Parisian intellectual who turns to autobiographical writing around the time of his father’s death. What does it mean to have grown up poor and gay, and what does it mean that one’s lifetime of intellectual work now seems unintelligible to the working-class culture and environment that education provided one an escape from? From ‘Anti-Bourgeois Theory’ we do not learn about the Parisian intellectual’s extended answer to such questions. We only learn that, together with his friends, he sets out to ‘reinvent theory’ by displaying ‘a lack of respect for the rules’ of university decorum. It looks as if the intellectual has been able to escape once more, now from the perplexities that a lifetime inevitably generates, via an autobiographical rekindling of a charismatic figure, namely, the political intellectual of the *French* cultural repertoire.

Such a solution does not work well for Gary Hall, a professional theorist confronting a distinctively anti-intellectual *English* culture. In order to show a ‘lack of respect for the rules’ in this particular context, Hall must actively reject auto-biographical writing, for the use of such a register would be too much of a concession to the liberal humanist elites who get to define the culture as bound to ‘normative ideas of the human subject, the proprietorial author, the codex print book, critical reflection, linear thought, the long-form argument, self-expression, originality, creativity, fixity, and copyright’ (2019: 1). According to Hall, the fact that education in general, and the reading and writing of literature in particular, are today perceived in England as ‘a means of freeing the mind of a rational human individual’ (2019: 3) is linked with the plain fact that a more or less fixed and unchanging elite continues to have an almost absolute control of the means of cultural production in the UK. Only by rejecting *their* assumptions about literate personhood can a question about the meaning of one’s life and achievements after the death of a father be transformed into the broader critical question about the material conditions of ‘radical theory’ at the site of its production, namely, the (neo)liberal university in the UK.
Beyond reiterating the widespread condemnation of competitive individualism and prestige-seeking in contemporary academic life, Hall diagnoses them à la Wendy Brown; that is, as undesired consequences of secretly dear, hard-to-give-up liberal humanism. Radical theorists may not be philosophical or economic liberals, but their disavowed attachment to a liberal framework for intellectual work is evinced by the ways in which they write, publish and, thereby, compete. Lack of respect for the rules need not, therefore, take the form of a masculine rebel yell. In Hall’s version it is more like a kind of civil disobedience, a way of ‘exploring what forms our work can take if, in its performance, it doesn’t simply go along with the pressure the neoliberal university places on us to deliver ever more quicker, and with the accompanying spread of managerial technologies of measurement and commodification such as rankings, citation indexes, and other metrics’ (2019: 9). From the impossible perspective of climate breakdown, could such an exploration be possible at all without an other’s lack of respect; that is, without a real interruption to academic normality?

Before being published in Media Theory, ‘Anti-Bourgeois Theory’ was delivered as a talk in, among other places, Universidad Iberoamericana Mexico City. The Philosophy Department hosted the talk, and I organized it as part of an incipient project titled ‘Philosophy of editorial practice’. A couple of months later I was kindly invited to write this commentary, which I am doing belatedly during a massive disruption of university life, as the epicenter of the coronavirus pandemic moves towards Latin America. From a ‘socially distanced’ – and therefore bourgeois – corner of the pandemic, I can vaguely remember the polite reception of Gary Hall’s talk at IBERO, and I wonder whether I expected anything other than politeness in that by-gone cosmopolitan era. I also ask myself what my project means now, after the end of the world of academic normality, which coincided with the passing of a close friend. My friend Pilar Vázquez was a professional translator, so I am thinking a lot about translation these days, and about Sarah Kofman’s definition of it as ‘the philosophical gesture par excellence’ (1988: 8). In this sense, translation is not reducible to the fact that Pilar translated John Berger’s work into Spanish, or that I translated Gary Hall’s talk into Spanish when he came to Mexico.
What is translation then, and what does it have to do with anti-bourgeois theory? My first attempt at tackling this existential question – presumably the same kind of question that moved both the French and the English characters of Anti-Bourgeois Theory in the first place – was about trying to understand the historical, social and cultural context in which I read and translated Gary Hall’s work. My second attempt was about trying to formulate a philosophical position on Hall’s injunction to ‘defeat liberalism’ through performing a ‘lack of respect for the rules’ of academic normality. Since the philosophical gesture _par excellence_ is also a gesture of betrayal (Kofman, 1988: 8), I ended up questioning such an injunction in two respects. The first concerns the relation between ‘anti-bourgeois theory’ and ‘inhuman theory’. The second concerns the place of subjectivity – in a sense that is actually opposite to ‘liberal humanism’ – within ‘inhuman theory’. I do not go as far as developing a full-blown, coherent argument for or against Hall’s injunction to defeat liberalism by means of inhuman theory. Instead, I try to draw attention to an infrapolitical dimension of thought that, in my view, was better _translated_ by the ‘pirate philosophy’ avatar of Gary Hall’s work. It is in such an infrapolitical dimension that I find the condition for cultivating freedom, before and after any classed, raced or gendered instance of ‘lack of respect for the rules’.

I. Liberalism in Elitist Mexico

On reading ‘Anti-Bourgeois Theory’ I was struck by Hall’s diagnosis of English liberal humanism as an end result of the brutally masculinist socialization of the elites that has historically taken place in the public schools (2019: 6-7). Such a diagnosis made me think about the meanings of liberal humanism in Mexico, about the relations between liberalism and the socialization of overwhelmingly male intellectual elites and, finally, about how the specific histories of liberalism in Mexico may be informing our writing practices in the Mexican university today. None of this can be taken for granted, since outside of the English-speaking world the term ‘liberalism’ is quite difficult to grasp, or so we learn from an entry in the ‘dictionary of the untranslatables’ directed by French philosopher Barbara Cassin. There, Audard and Raynaud distinguish liberal philosophy and economic liberalism from a vague yet
distinctively Anglo Saxon ‘social and cultural attitude’ (2018: 852). If, as Hall suggests, such a social and cultural attitude is hegemonic in England because public school-educated elites still control the culture industries, what do we in Mexico get from ‘our’ intellectual elites, and what does that have to do with how we operate as scholars in the university?

In Mexico, talk of ‘liberalism’ belongs to literary writers, political philosophers or historians of national history. According to the dominant narrative, liberalism was defeated as early as the beginning of the twentieth century, when the stronger cultural influence of French positivism became institutionalized in the modernizing visions and the educational practices of an authoritarian state (Leyva, 2018: 49). In popular culture, ‘liberals’ come to mind as quaint characters from school textbooks – as when current president Andrés Manuel López Obrador invokes the fathers of the nation in order to explain his revolutionary project to the Mexican people, but is certainly unlikely that liberalism in the third sense of ‘a social and cultural attitude’ ever became as widespread in Latin American societies as it did in the cradle of liberalism, or the UK. What is relevant here is that such a difference has to do with the history, the material conditions and the symbolic status of writing in Hispanic American nations such as Mexico. Seemingly universal or ‘liberal’ notions of proprietary authorship, self-expression, originality, creativity, fixity, and copyright came much after what Graciela Montaldo describes as ‘a regime of the letter that imposed itself during the colony and which was not just a disciplining by means of an exclusionary practice – writing – but above all by means of a hegemonic tongue, Spanish, upon a multiplicity of indigenous languages’ (2017: nonpag). In Hispanic America, then, the uses and understandings of ‘liberalism’ have to do with the fact that writing came to be defined not in relation to art, but rather in relation to politics. As a result, what was recognized as ‘literature’ in Europe remained a marginal expression of writing in the Hispanic American nations for much of the nineteenth century, and for some critics remains marginal even to this day (Ollé-Laprune, 2011). At any rate, instead of liberal bourgeois values, the practice of writing in Mexico has embodied criollo values – those of the Spanish colonisers’ descendants. Their vision was, of course, to position the nation as part of the civilised world, for which they had to do ‘literature’ in the specific sense of colonizing the ‘barbarous’ other through its fictionalization.
In his classic sociological study of twentieth century Mexican intellectuals (1985), Roderic Ai Camp argues that the definition of such figures was largely determined by Mexico’s precarious economy and the weakness of its institutions after the Mexican Revolution (1910-1921). Books sold so little that writers chose a career in public office out of economic necessity. While it was not necessary to be born wealthy in order to become a prominent intellectual, it was however necessary to make political connections through a mentor, and mentors were mostly found in higher education institutions concentrated in Mexico City. In the 1940s and 1950s, the role played by the public schools in England was most closely resembled in Mexico by the National University (UNAM) and the National Preparatory School (ENP). Unlike the former, ENP and UNAM drew most of its students from middle and lower middle-class backgrounds. The strongly positivist and highly charged anti-clerical atmosphere at ENP and UNAM eventually led the more middle-class sectors to migrate to more liberal private universities such as Jesuit Universidad Iberoamericana, which is still among the three universities that continue to provide a meeting point for various Mexican elites. The point is, however, that the historic association between writing and politics became more entrenched. Once in Mexico City, would-be intellectuals met through collaboration in journals and contacts in the publishing world. By means of their close association with political mentors and state politics, many of the historic representatives of ‘Mexican literature’ were able to exert considerable influence on public life.

As Camp continues to note in Mexico’s Mandarins (2002), traditionally writers – that is, political essayists, novelists and poets rather than academic theorists – formed groups or circles surrounding an important publication that was tightly closed to the ideas of non-members. Such circles typically reached a very limited audience, namely, urban, educated, middle-class residents concentrated in Mexico City. This basic composition of Mexican intellectual elites and their audiences changed very slowly after the violent crushing of the student movement in 1968, when intellectuals split between those who would continue to cooperate with the government and those who retreated into the universities. Not surprisingly, it was the state itself that gave this alternative to intellectuals. By becoming professional academics and artists, intellectuals gained some ideological autonomy, but lost power to influence state politics. Thus began the liberal age of ‘civil society’, feminism, study abroad
scholarships, and contemporary art. Eventually, through the creation of state agencies devoted to scientific excellence, culture and the arts, the neoliberal state was able to assimilate an expanded intellectual milieu, and quite successfully gave rise to the export-oriented academic intellectual – which is the one that we are, in so far as we are measured, institutionally, in terms of scientific article output, impact metrics and other globalized economic standards of proprietary authorship, self-expression, originality, creativity, fixity, and copyright. In sum, it seems to have been only yesterday that we became something like ‘liberal humanists’ in Gary Hall’s sense of the term. But how does that sit with the longer history of writing, politics and the shifting models of ‘the intellectual’ in Mexico?

In ‘Anti-Bourgeois Theory’, Hall points to the English elite’s control of the British culture and media industries as the explanation of liberal humanism as a hegemonic culture and of the fact that women and BAME authors continue to be shockingly underrepresented in that culture (see also Kean, 2019). He then asks whether introducing some quotas would make the culture less liberal humanist, and therefore less anti-intellectual. This is an interesting question to be asked in the Mexican context, wherein elite masculinity does not appear as anti-intellectual, but rather as ‘high and hard’ intellectuality, to borrow the words of Emily Hind. In her recent book on *Dude Lit* (2019), Hind correctly observes that ‘a famous writer’s name persists as the symbol – literally, in Mexico, the signage – of intellectual prowess’ (2019: 5). Her reading of ‘Mexican literature’ as a performance of power resonates with Camp’s research only by starting with the fact that it was economic and institutional precarity that drove would-be intellectuals to seek status recognition through informal politics. By positioning gender at the heart of these dynamics, however, Hind actually exposes the limitations of Camp’s liberal approach. In Mexico, the construction of an authorial reputation has historically involved performing the *macho* role of a civilized barbarian. If we think of liberal humanism in the Mexican context as a ‘careful balance between bad boy rule breaking and gentlemanly scholarship’ (2019: 16), we easily understand why its concrete benefits have been unavailable to women, and indeed to anyone effectively marked as a barbarian within the colonial regime of the letter.
One of the legacies of nineteenth century Mexican liberalism is that women (like all other marginalized groups) have not been formally excluded from any level of education since the second half of that century. Yet an overwhelming majority of the Mexican intellectuals studied by Roderic Ai Camp were men, as were the members of the other Mexican elites – military, religious, business and political elites – that Camp has also studied. Despite the changes of the last 30 years, the underrepresentation of women and the straightforward exclusion of non-white majorities, rural people and indigenous languages continue to be a salient feature of Mexico’s mainstream culture and media.¹ Like the fictional assimilation of the indigenous other, women’s symbolic absence seems to have provided an essential anchor for the persistent aura of the famous writer’s name, which indeed continues to be a pillar of the Mexican cultural imaginary. In view of the practical difficulties that this creates for women writers, Hind is a forceful advocate of quotas in publishing and other culture and media industries. Such a position, as Hall seems to recognize, already constitutes a necessary sort of disrespect for the rules of liberal decorum. Yet Hind also reminds us that rule-breaking is not a gender-neutral performance and, perhaps unwittingly, that there is a risk in mirroring such a gesture. By calling for an abolition of the very category of ‘Mexican literature’, Hind opens up the question of what exactly should exist in its place. The quota solution, enclosed as it is in a conventional academic monograph with all rights reserved, turns out to be exemplary of the difficulty of ‘defeating liberalism’ in practice.² Like intersectional identity politics, quotas are themselves a liberal sort of disrespect that by itself does not guarantee the development of critical and creative alternatives to the gendered institutions of proprietary authorship, self-expression, originality, creativity, fixity, and copyright.

While there may be something ‘untranslatable’ about English liberalism, there are reasons to think that contemporary capitalism has by itself achieved the ultimate translation of what Gary Hall names ‘liberal humanism’ into Spanish as into every language that is recognized by the university. Particularly in a nativist populist conjuncture, which places the academic intellectual of the neoliberal age on the ‘wrong’ side of the political spectrum, and in which once again political participation is regarded as the most important justification for the intellectual’s existence, capitalism seems to be leading the way by merely replacing the bad boy aesthetic
performance with a performance of academic productivity that is powered by algorithms and digitally mediated political outrage.

In *Against Abstraction* (2019), Spanish philosopher Alberto Moreiras recalls his academic past as a US-based Latin Americanist, and in the process observes that ‘an English-speaking Latin Americanist is still someone who translates and is perceived as a mere translator’. Such a perception would impose on the Latin Americanist ‘a humiliating mimesis: you must try to become them’. Happily, Moreiras is no longer bothered by such an imposition, since he is done with Latin Americanism and, more generally, with the entire Hispanic intellectual tradition, having concluded that such a tradition has produced only one dominant thought, namely, identity. From this dominant thought would spring the most commercially successful Latin Americanist trends of the time. The subalternist and decolonial turns would be so successful, for instance, because they are ‘identitarian and fundamentalists in a world that was and is complacent enough with identitarian fundamentalism’.

Such a critical perspective on the commercial success of identitarian Latin Americanism resonates with Hall’s own diagnosis of Anthropocene scholarship as ‘bourgeois theory’. The same argument could apply to the Latin American Left’s self-erecting as ‘the authentic, the proper, the identical’, and more so in as far as it is supported by the Anthropocene scholarship’s vested interest in the historic victims of capitalist civilization. One could even speculate that Hispanic America’s Catholic *criollo* humanism is finally meeting again with Anglo America’s liberal humanism through the hope of finding some sort of redemptive knowledge that can also be conventionally packaged in the traditional, copyrighted formats of the academic monograph. Like quotas, decolonial and intersectional scholarship does not by itself necessarily create new ways of doing scholarship, and may even provide new ways for academics not to care about ‘the materiality of their own ways of working and thinking’ (Hall, 2019: 12). In this particular conjuncture, a more consequential ‘lack of respect for the rules’ might involve taking a step beyond the obsolete humanism of identity politics towards the incalculable dimension of thinking that Gary Hall now terms ‘inhuman theory’.
II. Writing Obsolescence in Spanglish

Before ‘Anti-Bourgeois Theory’, Hall (2012; 2016) had proposed pirate radical philosophy as a theoretical orientation for a digital posthumanities. Drawing attention to the etymological roots of the word ‘pirate’, he theorized experimental, collaborative writing and publishing practices as ways of ‘teasing’ and ‘giving trouble’ to university knowledge. The acceleration of Anthropocene scholarship, which is part and parcel of the acceleration of climate breakdown, seems to have called, in more recent years, for an even more explicitly anti-bourgeois avatar of pirate radical philosophy that now bears the name of ‘inhuman theory’. Anti-bourgeois theory appears as the political dimension of inhuman theory, in that it involves a decision not to go along with the neoliberal pressure of instrumentally oriented academic productivity, not to ignore the precarious material conditions of intellectual work, and not to ignore the ways in which this work becomes fetishized, that is, capitalized and complicit with its own domination in practice. Regarding the ‘obsolescence’ of bourgeois theory in the Anthropocene, Hall extends to ‘radical scholarship’ Amitav Ghosh’s argument that the bourgeois novel’s formal limitations not only preclude treatment of climate breakdown as a literary problem, but that they also render literature complicit with it. The fact that in Dude Lit Hind also refers to Ghosh’s essay and extends that same argument to the bad boy aesthetic that underpins the intellectual authority of men (2019: 91) suggests to me that anti-bourgeois theory provides a critico-political space wherein to analyze and to come to terms with what Joanna Zylinska (2018) calls ‘the End of Man’. This does not refer to a vanquishing or humiliation of the male sex, and does not only refer to ‘the last gasp of a particular version of white masculinity’ (Zylinska, 2018: 46). More fundamentally, the End of Man refers to the ethical obligations presented by a potentially irreversible condition of economic and existential precarity.

Since there is no universal stance from which to fully characterize and judge everything that still happens under the umbrella of ‘liberal humanism’ and even ‘the university’ – and which includes a wide variety of scholarly activisms from the North and South – anti-bourgeois theory is in the end a radically contextual practice, made at most of pirate provocations and teasings, rather than of something that can be globally announced (and commercially packaged) as a new ‘theory’. But precisely in
the context of climate breakdown acceleration it seems to me more important than ever to ask about that which does not ultimately depend on the positive cultural particularities of any context, and that makes it possible to translate anti-bourgeois theory in ways that are situated, concrete, and alive, rather than abstract, irrelevant or even ‘obsolete’ from the very start. The question for me is whether this is a political question, a question for activism, or whether it is another sort of question, that is, a question for thinking that brings us once again to the starting point of this long response to ‘Anti-Bourgeois Theory’. The starting point was not ‘Theory’ but autobiographical writing, and the question of whether or not to write autobiography in the face of a particular kind of perplexity. At this point I would ask about the connection between that kind of perplexity and the issues raised by the Anthropocene, which following Ghosh and Hall, both literary and academic scholarship are formally impeded to address. Is it possible to get away from that sort of perplexity by ‘defeating liberalism’, or by replacing the proprietal author and copyright with a new community ‘replete with new notions of the subject, agency, the human, and so on’ (Hall, 2019: 19)? I do not think so, and this is why I would rather go back to pirate philosophy, and to explore what it is that makes it really ‘radical’.

Sarah Kofman’s translation of the Greek **poros**, from which both ‘aporia’ and ‘pirate’ seem to descend, suggests to me that before and after ‘the university’ and ‘liberal humanism’, before and after English and Spanish, before and after the binaries of center and periphery, man and woman, the West and the rest, there is a more elemental question that pirate radical philosophy is about. It is not, in my view, so much the liberal environmentalist question of how to give proper credit to the non-human elements that contribute to scholarship (as opposed to filling humanist forms of scholarship with non-human ‘stuff’). It is not even the question of how to achieve more diversity and epistemic justice in academic scholarship, by taking control of the means of production and experimenting with them in an artistic way. These are important questions for sure, which demand many pirate interventions that ‘disrespect the rules’. But even before ‘giving trouble’, piracy may mean simply finding a way through obstacles, and not just any obstacles, but rather ‘a situation from which there is no way out, which is aporetic’ (Kofman, 1988: 8). And this is, I think, the question that pirate philosophy is ultimately about.
In ‘Beyond Aporia’, Kofman carefully distinguishes *poros* (‘way’) from *methodos*. By contrast with *methodos*, *poros* intervenes only ‘where no trail exists’, when it is a matter ‘of crossing an impassable expanse of territory, an unknown, hostile and boundless world, an *apeiron*…’ (1988: 10). In the Greek world the ultimate *apeiron* was the ocean, which media philosopher John Durham Peters describes, more recently, as ‘the primordial medium-free zone, immune to all human attempts at fabrication’ (2015: 54). For Kofman, language itself is an ocean alive with aporia, and it is the sophist who is better equipped to deal with the confusion and disorientation that such an environment breeds. Through a display of technical intelligence (*Metis*), the sophist invents *poros*, no matter what the situation might be. But since the sophist also enjoys the ‘suppleness, polymorphy, duplicity, equivocity, tortuous and oblique ambiguity’ (Kofman, 1988: 15) that allow them to navigate aporetic waters, they appear to us as weird, unsettling monsters. Yet no one resembles the sophist more closely than the philosopher, and it was in perplexity at the fact that ‘trapping the sophist means trapping oneself’ (Kofman, 1988: 16) that Plato set up a hierarchical (though ultimately false) distinction between technical intelligence and philosophical intelligence. Kofman demonstrates, however, that such a gesture was not simple or unequivocal. By making Eros the son of Poros, and defining Philosophy as the Love of wisdom, Plato also made philosophy ultimately dependent on technical intelligence. Even more importantly, in The Symposium he positioned Love as the answer to the aporia of knowledge – ‘how will you look for something when you don’t in the least know what it is?’ (Plato 80d in Kofman, 1988). And finally, Kofman points out that the true philosophical aporia is somewhere else, in Penia, the mother of Eros: ‘in her all the opposites are under erasure; she is neither masculine nor feminine, neither rich nor poor, neither a transition nor the absence of a transition, neither resourceful nor without resources’ (Kofman, 1988: 26). The ‘inhuman theory’ avatar of pirate philosophy may look like some version of elemental media theory, but more fundamentally, I think, it is about loving engagement with the kind of intelligence that allows one to live not through knowledge, but by discovering ‘stratagems, expedients, tricks, ruses, machinations, *mechane* and *techne*…’ (Kofman, 1988: 8).

Long before liberalism, it was the subject of philosophical knowledge that shaped the idea of an author. As feminist philosopher Michele Le Doeuff observed in 1977, the
subject of philosophical research traditionally ‘presented himself as the individual person, whether Aristotle, Spinoza, or Hegel. And philosophical didactics also works between two personal poles, the master ‘who knows’ and the pupil ‘who does not yet know’ (1977: 11). Although women were never favoured by such a structure, Le Doeuff argues that philosophical antifeminism became a disciplinary feature only in the nineteenth century, and not so much via liberalism as via positivism – which is, let us remember, the cultural influence that ‘defeated’ liberalism early on in Hispanic America. Philosophical antifeminism only appears to be aporetic if one buys the dogma of a superior kind of intelligence which is encapsulated in the name of a famous individual, with or without copyright. For Le Doeuff, the way out of such a seemingly aporetic situation is to invent a different form of writing. In her words, the future of the struggle of women for access to the philosophical resided in ‘a practical application of philosophy’ which was enacted by ‘a collective form of philosophical work and by a recognition of the fact that, in any case, the [philosophical] enterprise cannot be reduced to personal initiatives’ (Le Doeuff, 1977: 11). Ever since, feminist writers have been collectively exploring pirate ways of writing and publishing that are often not legally or professionally recognized, but which can be and just as often are (Jefferies and Kember, 2019). Hence, for example, Sarah Kember’s ‘invitalism’, which stands for a ‘scholarly writing that is not about, but out (as in, half way out) of scholarship, always in the process of reinventing it, of experimenting and institutionalising’ (2014: 114).

As for my own translation project, the challenge remains of devising poros that eschew the contextual demands for disciplinary, political and even linguistic identity. Pirate collaboration across languages and contexts is simply impossible without a more fundamental openness to the shared apeiron of existence, and without a loving relation with the singularity embodied, in each case, by technical intelligence.

I agree with infrapolitical thinker Alberto Moreiras when he says that the task of thinking today is existential, rather than political. Before and beyond any political identification there is writing itself in an ‘autographic’ rather than autobiographical sense. Autographic writing is a writing that moves, not in order to constitute a truth, but rather to seek truth ‘in the sense that it attempts to traverse the phantasm in every case, and it produces destitution in the sense that traversing the phantasm
brings us closer to the abyss of the real’ (Moreiras, 2020). I would suggest that the abyss of the real is the condition of possibility of translation, in the pirate sense of Love. The question then is why we write, why we must write, and why writing is the only way, the only poros that no one can be sure of finding, until one does:

‘I do not know whether writing will help me, but I have no other recourse – either for action or reaction (...) I want to save the trace, some minimal remainder of what events destroyed, so that perhaps I can let the events go for good without carrying away my entire life with them. I owe it to my sister, and I owe it to my father – my sister told me without telling me at the time of her death, and then I remembered my father told me the same thing.’

(Moreiras, Against Abstraction)

References


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Notes

1 Hind quotes the empirical findings of Claudia Sorais-Castañeda: “The official numbers in the media in Mexico claim that among self-defined professionals, men outnumber women in every branch. The least gender equity is found in the television industry (...) Of the total economically active population in Mexico for 2006, only 0.69 percent claimed a profession in arts and entertainment; only one-fourth of those workers were women. Men outnumber women, to the tune of 87 percent, for the professions of composers, singers, musicians, actors, and dancers. The percentage drops to 65 percent for writers, critics, journalists, and editors.”
… in a way that resonates with Hall’s diagnosis of the liberalism that underpins most radical theorists’ overlooking of the material conditions of their intellectual production, Spanish philosopher José Luis Villacañas accuses Ernesto Laclau’s political theory not only of having liberal assumptions, but also of having them in a melancholic way. According to Villacañas, for Laclau as for liberal philosophers more generally, politics begins with civil society. Moreover, however, as for most Latin American liberals perhaps, the goal for Laclau is to show how politics, through a dualistic friend-enemy logic, can turn a fragmented civil society into ‘a people’. Laclauian populism turns out to be not a radical alternative to liberal philosophy, but a melancholic attachment to liberal assumptions which falters under neoliberal conditions as theorized by Foucault. There, civil society has become equivalent to the market, and government has given way to governmentality. The result is an indistinction between political and economic demands that seems to call for a new thinking of the political through the relation of subjectivity and truth. Neither Laclau nor Foucault, in Villacañas’s view, manage to perform such a renewal of political theory, and their failure is due, he has suggested, to a lack of in-depth engagement with Lacanian psychoanalysis.

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Anti-Bourgeois for What?:
A Reflective Response to Gary Hall’s ‘Anti-Bourgeois Theory’

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Abstract
This short commentary responds to Gary Hall’s programatic critical provocation ‘Anti-Bourgeois Theory’. It points to some of the issues involved in understanding the politics of French ‘theory’ when detached from its historical context, and invites reflection on the resonances between Hall’s positions and those of some key thinkers in the Marxist tradition.

Keywords
post-structuralism Marxism, Liberalism, Critical Theory, Socialism, Bourgeois

The first thing I’ll say in response to Gary Hall’s very timely provocation is that I don’t disagree with any of it; and I think many readers will recognise the dilemmas that he highlights. How do we keep faith with a serious opposition to the norms of possessive individualism, in a culture that simply demands our complicity with them? How do we situate ourselves in relation to the sustained and still-ongoing neoliberal attack on a set of institutions – from traditional universities to the mainstream press – that we never believed in (indeed, that our political and theoretical positions were first formulated in opposition to)? These are issues facing not just radical theorists but political activists and cultural practitioners across a vast range of fields and disciplines.
However, there is a particular issue with the field of ‘radical theory’ on which Hall is commenting here, and from which much of his own work has historically proceeded, which is a formation that I think still bears the marks of its peculiar conditions of emergence in the 1970s and 80s. The core canonical thinkers of this field, especially its formative ‘post-structuralist’ phase – Foucault, Derrida, Deleuze etc – all belonged to a generation of Parisian thinkers who lived through, contributed to and were shaped by the wave of radical democratic, anti-capitalist, ant-authoritarian politics that swept over much of the planet during the 60s and 70s. But their fame and the longevity of their influence owe at least as much to a more discrete and politically ambiguous set of cultural-historical phenomena. For all that they themselves produced persuasive philosophical rejections of ideas like authorship, originality and the philosophical canon, they owed their profiles as much as anything to a formally conservative French intellectual culture that has historically placed a high value on ‘philosophy’, understood as participation in a distinctive and largely self-enclosed tradition of thought stretching back into antiquity, and to the historic fascination of American elite academics with that French intellectual culture (a discernible phenomenon at least since the days of William James’ vocal and sustained advocacy for the work of Henri Bergson).

In fact, I’d suggest that their popularity and effective canonisation in the 1980s derived as much as anything else from the specific situation in which liberal scholars in elite American universities found themselves at that time: under attack both from the New Right and its conservative allies, and from the New Left, as scholars – many of them former student radicals – influenced by Marxism, women’s liberation and the black freedom struggle began to find footholds in the academy.

Of course, figures like Foucault, Derrida etc, were clearly themselves members of that same New Left generation, or its Parisian equivalent: those shaped above all by the experience of 1968. But as such, their work was always influenced by the ways in which the cohort of radicals had been forced to distance themselves from the official Marxist-Leninism of the French Communist Party, and of those intellectuals most closely associated with it (among them Sartre and Althusser). And I think it was this scepticism towards orthodox Marxism as one of the features of their thought that made it attractive to liberal scholars in the United States in the 1980s.
In France itself, there was never any question that these were figures of the left, and were absolutely not engaged in promoting any form of liberalism. There was a specific movement among French philosophers to very explicitly reject the Marxist and Communist tradition in favour of a celebration of Western liberalism; this was precisely the project of the so-called *nouveaux philosophes*, who were utterly detested by Foucault, Derrida et al. But outside of those French political debates, it was relatively easy to deploy their ideas – or a particular version of them – in defence of a particular strand of American liberalism that had always (again, at least since the days of William James and the other early pragmatists) combined a penchant for radical relativism with a tendency towards political agnosticism (or at least a discursive style that rarely did anything so gauche as to declare an explicit political commitment).

To put this as clearly as possible: in France, Derrida et al may have been understood as *soixante-huitards* and unapologetic members of the libertarian socialist left. And yet it wasn’t as revolutionary thinkers that they were being read and taught at Yale, but as exotic avant-gardists who could be slotted quite neatly into a basically anti-political tradition of mannered liberalism. And if they hadn’t been being taught at Yale, then it’s doubtful that anyone would be talking about them now.

This account feels very remote from present realities, but it’s probably worth pointing out that when I went to Sussex to study Critical Theory in 1994 – just a couple of years, I think, after Hall arrived there himself at the very high water mark of the fashionability of deconstruction (he did a PhD with Geoff Bennington – the doyen of Anglophone Derrideanism), I was laughed at by my fellow-students each time I used the very word that appears in the title of Hall’s essay: ‘bourgeois’. Several times, I recall very clearly, I suggested in seminars that the anti-individualism of post-structuralists such as Derrida surely had some affinity with the Marxist critique of bourgeois individualism, and each time I was mocked by at least some of my peers for the quaint old-fashioned redundancy of my ‘unreconstructed Marxism’.

This may be a mere anecdote, but I think it remains highly relevant to many of the issues raised in Hall’s essay and the particular ways in which he raises them. Because this is an article that names its purpose as ‘anti-bourgeois’, which features a denunciation of the vulgar anti-intellectualism of English elite culture, and a series of acute observations on the class politics of academic knowledge-production, and yet
which makes no explicit engagement with Marxism or the Marxist tradition, except to
denounce some of its practitioners for their complicity with bourgeois liberal
norms.

That isn’t a criticism of the essay at all, and I think that most of those practitioners of
Marxism would entirely agree with Hall’s critiques, while suggesting that there are
valid strategic, contingent political reasons for not wanting to deprive left-wing
publishers of income-streams and for using the bourgeois apparatus of celebrity and
elite scholarship to promote radical ideas when no other means are available. I’m not
saying they’re necessarily right. My point isn’t to defend them or to undermine their
putative defences. My point here is simply that I think they would all see themselves
as making necessary compromises in the service of a more sustained and determinate
project: the achievement of a form of society (be it fully ‘communist’, or merely
somewhat more democratic than the ones we inhabit today) wherein the social
relations that produce phenomena such as copyright law had themselves been
transformed beyond recognition. This would be their defence I think: the
compromises they make now might be necessary if they are to serve the long-term
goal of socialism; and socialism is the only long-term goal that is really likely to put
an end to the reign of copyright, or bourgeois liberalism, or the public-school
educated philistines that govern English cultural institutions.

Whether or not we accept such defences, they at least indicate the possibility of being
– at least in theory – not merely against something (be it neoliberalism, or bourgeois
liberalism, or any of the other things that Hall states or implies that he’s against), but
for something: socialism, communism, radical democracy, social democracy, etc. And
the question that persists for me in reading Hall’s essay is simply this. I understand
what he’s against, but what is he for? Perhaps more specifically: in the name of what,
on what grounds, according to what criteria, for what reasons, is he against the things
that he’s against? Is this a contribution to socialist thought? And if not, why not?

More specifically: how does his brilliant critique of bourgeois elite culture and its
endemic philistinism (especially in its English iteration) differ from, or relate to, that
of Lukacs (who argued that the bourgeois were incapable of thinking historically or
dialectically), or the analysis made by Perry Anderson & Tom Nairn in their classic
(and explicitly Marxist) analysis of ‘the peculiarities of the English’ (that explicitly
critiques English elite anti-intellectualism as grounded in anti-theoretical empiricism? What’s the relationship between his evocation of McKenzie Wark’s denunciation of contemporary bourgeois fiction, and the denunciations of bourgeois fiction made by Marxist critics (from Lukacs to Brecht to Bakhtin to Colin MacCabe) over the course of the 20th century? And more specifically still: how does he understand the relationships between his own practices of anti-copyright, and any wider movement to challenge relations of property and individuality in other spheres and on other scales? Does he, for example, situate himself as a member of any determinate wider movement, such as the loose network of ‘pirate parties’ that emerged in some European cities in the 2010s?

I ask these questions in a spirit of genuine inquiry, and not at all in the sense of issued challenges. It seems to me, for example, that there is a clear continuity between some of Hall’s practice and a certain tradition of politically radical experimentalism. That tradition would include, for example, certain strands of autonomist Marxism: wherein, indeed, the promotion of individual celebrity figures has been conventionally eschewed in favour of collective writing and theorising (I’m thinking here of groups like the Midnight Notes collective), and the work of historically important activist groups such as the Combahee River Collective, and with the spirit of early experiments in collective or anonymous knowledge-production online. Some of these projects had an explicit orientation towards some kind of libertarian socialism; others were more loosely anarchistic or libertarian in character (and as such, often turned out to be easily appropriated by strands of neoliberalism).

To be very clear here, my own perspective is that there’s no necessary choice to be made between, on the one hand, for example, building an anti-copyright, anti-property, anti-capitalist knowledge-production system (which is where much of Hall’s creative and critical energy has been directed, for many years) and, on the other, working to build a political movement or project capable of using the state power to create equivalent systems on a much larger scale. Both are valid and necessary strategic objectives, I think. But I say this from a perspective that is explicitly socialist and explicitly oriented towards the general aim of building collectivist, egalitarian and libertarian alternatives to capitalist society and bourgeois
culture. And what wearied me long ago about the critical tradition that I’ve mentioned, and that has shaped so much of my thinking and Hall’s, is that any such objective is so rarely named or formulated by its key texts, and I’m not sure that that’s a demurral that helps anything at all; apart from the reproduction of hegemonic liberalism. And I’m not totally sure on the basis of what political assumptions Hall’s ‘anti-bourgeois theory’ is actually being formulated.

Finally, I’d point out that the idea that elite academic culture might not serve any very radical purpose is hardly a new one. Historically, once people have come to that conclusion, they’ve generally set themselves the task of trying to constitute institutions or make forms of cultural engagement that could enable communities of people outside the social elite both to produce knowledge and to acquire different kinds of education. In the UK we could point to projects such as the Workers Education Association and History Workshop as elements of this tradition. Both have been contexts in which profoundly important and innovative theoretical work has been done, but also in which very basic forms of canonical radical knowledge (such as the historical materialist theory of social change) have been reproduced and disseminated. The very existence of such institutions proves correct one of Hall’s basic theses: that working class people are not as stupid as bourgeois elite culture constantly tries to tell them that they are and also tries to tell members of the middle and elite classes that they themselves are too. I wonder how, if at all, Hall sees his arguments and his practice as fitting in with, or responding to, or reacting against, or simply ignoring, that particular tradition of anti-bourgeois theory.

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