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The emotional in-formation of digital life: Simondon, individuation and affectivity

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ABSTRACT

The current paper argues for an onto-genetic account of our relationships with digital technologies, that captures the *excessive* operation of data and the meta-stabilizing role of emotion in the operation of individuation. Drawing on Gilbert Simondon's (2020a. Individuation in light of notions of form and information. Trans. T. Adkins. London: University of Minnesota Press; 2020b. Individuation in light of notions of form and information: Volume II Supplemental Texts. Trans. T. Adkins. London: University of Minnesota Press.) notions of information and emotion, the paper captures the deep integration of datafication in everyday life, and the operation of emotion to (meta)stabilize the pressure and tension that data generating practices present to psychosocial life. Data can operate across individual and collective life, and therefore present a *tension* that emotion operates to address in ensuring the persistence of the individual. The paper concludes with an argument for the value of the notion of *emotional in-formation* for capturing the simultaneity of data and emotion in the ongoing constitution of individuals. This can provide a conceptual foundation for future social scientific analysis focusing on specific data-emotion practices.

KEYWORDS

Simondon; information; datafication; emotion; affectivity; individuation

Introduction

> At the far end of the room, the slake-moth had picked up one of the metal tubes, putting its face in the flow of emotion from its open end. It shook it in confusion. It opened its mouth and unrolled its obscene, intrusive tongue. It licked the end of the pipe once, then plunged its tongue into it, eagerly seeking the source of this tempting flow

The extract above comes from China Miéville's (2011) Perdido Street Station fantasy novel, in which the primary threat to the city of New Crobuzon is a human adult size moth-like creature (a slake-moth), whose patterned wings mesmerize potential victims, allowing the slake-moths to pounce and feed on citizens' 'flow of emotion'. Slake moths do not physically kill their victims but rather psychically kill them by consuming their psychic-emotional life. Emotion is central to their existence as humans, and

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consequently victims are left as stupefied physical bodies following attack by the slake-moth. The extract above is from a scene in which one of the main characters, Isaac, has created a helmet that channels his emotional emissions through a pipe away from his body. The result of which is to distract the slake-moth away from its nest so that Isaac can destroy its eggs to stop the birth of new slake-moths.

Miéville's slake moth is a valuable allegory with which to start a paper exploring emotional life as part of our relationships with digital technologies. The slake moth acts as a fantasy version of digital technologies' insatiable appetite for data – which is increasingly turning its attention to emotional life. Knowing how individuals *feel* is big business, particularly to digital technology companies whose revenues are heavily advertising-dependent, e.g. so-called 'Big Tech' (Van Oort 2019; Zuboff 2019). One can try to evade the commodifying practices of Big Tech that generate data pertaining to people's emotional life, e.g. through non-tracking internet browsers. However, the growing datafication of society makes it difficult to completely avoid the *data gaze* of technology companies (Beer 2018; Manolev, Sullivan, and Slee 2019; Van Dijck 2014).

The idea that technologies can capture and categorize people's emotional activity relies on a model that frames emotion as being visible to others through interpreting physiological activity. For instance, data such as facial expressions, sentiment analysis of text-based social media data, and voice-based data in interactions with commercial and government organizations (e.g. insurance companies, state/government tax departments) (Barrett et al. 2019; Bollen, Mao, and Pepe 2011; Durán and Fernández-Dols 2021; McStay 2018; 2020; Meijer et al. 2016). Once generated these data are subject to emotional categorization, i.e. they are treated as indicative of individuals' emotional state. The development and use of emotion detection technologies is subject to significant increase in sectors ranging from policing to education, within many more in between. The push for emotion detection comes from industry, with emotion seen as big business in terms of its commercial potential, e.g. marketing new emotion detection technologies to criminal justice, education, retail sectors (McStay 2020).

Emotion detection relies on the idea that physiological expressions are reliable indicators of individuals' interior feelings and states. And that technologies can be designed to reliably identify and detect interior feelings through, for example, facial expressions, including in relation to so-called *micro-expressions,* which the emotion detection industry often claiming that technologies can identify more reliably than humans can (Ellis and Tucker 2020). Kate Crawford (2021) identifies a key issue here, drawing on the work of Lisa Feldman Barrett, who has developed a different model of emotion, based on the idea that the brain *constructs* emotions in response to changing environmental *information*. Feldman-Barrett and colleagues undertook a meta-analysis of neuroimaging studies of emotion, which found limited evidence to support the classical view of emotion, namely that emotions operate as innate forms of neurological activity *reducible* to specific areas of brain activity (2019). This led Feldman-Barrett to claim that '[D]espite tremendous time and investment, research has not revealed a consistent bodily fingerprint for even a single emotion' (2018, 15), and that 'emotion fingerprints are a myth. Variation is the norm' (2018, 23). As Crawford notes, emotion detection systems are based on the traditional essentialist idea from the early advocate of a universalist approach to emotion, Paul Ekman. The essentialist model frames emotions as innate biological objects that are expressed physiologically, which allows for detection by specialist technologies.

However, the emphasis on the brain constructing emotions, in emergent and relational ways, makes 'detection' potentially the wrong framework for thinking emotion. Feldman Barrett captures this when stating '[W]e don't *recognise* emotions or *identify* emotions: we *construct* our own emotional experiences, our perceptions of others' emotions' (2017, 40). As such, and as Crawford notes, what is needed is a model of emotion that accounts for their emergent and relational operation. The current article argues that the work of the philosopher Gilbert Simondon can provide a more emergent and relational approach, particularly in terms of the relational ways that data generate emotional activity, both in terms of eliciting emotional responses, and in terms of being part of the broader set of affective relations through which bodies operate (DeFalco 2020; Douglas-Jones 2021; Goodings and Tucker 2013; Serres 2008; Venn 2010). The question for the current article is how to conceptualize the relation between data and emotion in a way that captures their interconnectivity in the temporal duration of the individual. This will help to address issues raised by the more traditional essentialist model that underpins emotion-detection technologies (Ellis and Tucker 2020).

The current article seeks to add to contemporary data studies literature by arguing for the value of developing onto-genetic understanding of the relation between data and emotion in the individuation of the subject (Tucker 2021). This involves highlighting the inter-connectedness of data and emotion in processes that constitute individual subjects. For Gilbert Simondon, emotion is valuable for conceptualizing the temporal persistence of the singularity that is the living being as processes of continual re-creation. This approach attends to the significance of data in contemporary life, but in such a way that does not simplify their operation. Emotion-detection technologies are premised on the idea that it is possible to measure emotion through quantifiable physiological activity. This is a rather narrow approach to conceptualizing emotion, and as such, it is important to address the significance of datafication but in a way that captures the broader emotional operation of our relationships with digital technologies. This is not to suggest that industry and Big Tech do not recognize the potential that technologies such as social media have to shape and manipulate emotion. Facebook's infamous emotion contagion experiment is a clear example of this (Kramer, Guillory, and Hancock 2014). However, this recognition does not extend to a broader understanding of the fundamental role emotion plays in the operation of individuation that constitutes social and psychological life. The emotional manipulation efforts of Big Tech still rely on the reductive idea of emotion as solely located *within* individuals. The current article argues for an expanded analytic approach that attends to the broader emotional impact of living with data, i.e. how social life emerges in and through relations that are simultaneously digital and emotional, individual and collective. Furthermore, it is important to conceptualize an approach that speaks to the emotional impact of datafication, not in terms of individual emotional responses, but rather in relation to the role of emotion *as data* in the persistence of individuals as temporal beings. This raises the question as to how individual life operates in and through processes that are simultaneously datafied and emotional? The current article will offer a specific contribution to literature in affect studies that focuses on datafication (e.g. Paasonen 2021) through careful analysis of the notions of information and emotion in the work on Simondon. Affect studies have offered much conceptual and empirical insight regarding non-reductionist approaches to the study of emotion and affect (e.g. Ahmed 2004; Anderson 2006; Ash 2015; Brown et al.

2019; Clough 2007; Gregg, Seigworth, and 2009; Leys 2017; Tucker 2011). However, the onto-genetic thinking of Gilbert Simondon has only featured in a limited way in affect studies to date, so this article aims to offer novel conceptual insight. This contributes to the recent emergence of work influenced by Simondian thinking across the social sciences and cultural theory (Bardin 2021; Combes 2012; García and Arandia 2022; Lapworth 2016; Tucker and Goodings 2014; Wrbouschek and Slunecko 2020). The next section draws upon Simondon's notion of information to capture the way that data operate not only to *communicate*, but more importantly to *constitute* the operation of events and bodies. This troubles the idea that the relationship between data and emotion is only defined as the former capturing and communicating information about the latter. The relationship is more complex than that.

The transformational potential of information

For Simondon, information is not digital, nor a specific form of materiality, but rather names the operation of individuation. For Simondon, information is not a substance or form, or the content of transmission in a classic information theory sense but names the operation of individuation as a process that constitutes the individual living being as an action. The individual being, in effect, exists as an ongoing act of individuation, through transmitting *itself* as information, into the future. Simondon's notion of information emerged as part of the cybernetic context of the 1950s/1960s, in which the emergence of mass computation elicited new theories of information. Simondon's interest was in terms of how a notion of information progresses the notion of *form* that consumed much of his philosophy. Having studied Ancient Greek philosophy, Simondon was motivated to deliver a notion of form that relied neither on the archetypal model of Plato, nor the hyleomorphic model of Aristotle (Simondon 2020b, 674–699). The issue for Simondon with existing notions of form was their reliance on the idea of a *finished individual*, whose form is then understood as originating from *outside* (archetype) or *inside* (hyleomorphic). Simondon developed a notion of information that drove his theory of individuation. This was not entirely at odds with cybernetic thinking at the time (Iliadias 2013) but did differ in terms of the *thickness* of its analysis.

Simondon saw information as part of the operation of a metastable individual, which is always-already part of a system/milieu. The milieu operates through an already *informed* element in relation with a *not-yet-informed* element. The former is stable, the latter metastable. The milieu operates through a tension as not all elements are formed due to the continuation of an ongoing process of organizing the relations between the disparate elements of the system. This is why *disparation* is a central notion for Simondon's thinking. Where it departs specifically from cybernetic thinking is the way it frames the relationship between emitter and receiver in classic information theory. For Simondon, the idea that the objects of emitter and receiver are fixed, and pre-given is problematic as it makes the role of information redundant. What is there to in-form if both objects of emitter and receiver are already constituted? Instead, receiver objects need to remain *open*, to be changed through the passage of in-formation. They require a notion of *potential*, which Simondon also referred to as '[T]he pregnancy of the form' (2020b, 691), its capacity for remaining open to interacting with '*receivers that are not defined in advance*' (2020b, 691). This reaffirms the notion of information acting as the operating force in the constitution of a system/milieu.

Information is therefore not considered as informing about pre-existing already-formed living beings, rather it *in-forms* the process of the constitution of an individual living being – it names the process through which individual life individuates. This relates to Michel Serres' (1982) take on information (which itself is influenced by earlier process philosophy such as Alfred North Whitehead and William James). For Serres, all objects and living beings emit, transmit and receive information – which constitutes the operation of individual and social life. One can think of the photosynthesis process of a plant flowering through receiving the *information* of sunlight. Or the anxious response of a child when receiving the *information* of an unexpected and sudden loud noise. In this case, the anxious response acts as information that is transmitted for others to receive, e.g. in the form of parental concern. This model could be argued to rely on the notion of already-constituted individuals, which makes it not completely aligned to Simondian thinking. The synonymity of the two models though exists in terms of the value of a notion of information as the primary mode of relationality in the operation of life. The concept of information defines the operation of relationality, rather than the operation of binary information in digital technologies and systems.

The conceptualization of information in Simondon's philosophy has attracted growing interest and focus in recent years, both in relation to datafication, and its role in the ontology of individuation (Coté and Pybus 2016; Dereclenne 2021; Tucker 2013; Tucker and Goodings 2014; Wark and Sutherland 2015; Wrbouschek and Slunecko 2020). Simondon's general philosophy of individuation is not human-specific, as it is concerned with any individuating process, hence the use of examples such as the Guimbal Turbine, crystallisation, and human perception (Simondon 2020a). Simondon introduced his concept of information in a largely pre-digital age, but the resonances with contemporary data practices are clear, which is a point made by Coté and Pybus (2016). The key distinction is that Simondon was not discussing information as *digital data.* However, this has not been an obstacle to it gaining growing influence in contemporary data studies (Coté and Pybus 2016), primarily through a focus on digitality imbuing information with a materiality that manifests as data practices that are multiple and specific to particular demands, and not knowable entirely in advance. Consequently, data come to be considered as non-representative, future oriented and transformative (Müller-Trede 2022; Tucker 2018), enacting specific temporal and spatial relations in ongoing processes of individuation. The analytic unit then becomes *system level*, rather than individual level, with a focus on systems as unfinished and existing as ongoing processes of becoming. For Simondon, being is becoming.

What we know is that with increasing prominence the relational-processes through which living beings persist as individuals operate through data. This means that an onto-genetic notion of information needs to account for the significant role of digital data as part of our relationships with digital technologies. Several concepts have emerged recently to try to capture the operation of data in contemporary society, including Louise Amoore's *data attributes, data yield, data centres, data environments* and *data inputs* (2020); Deborah Lupton's (2020) *data selves* and *personal data imaginaries;* Melissa Gregg's (2015) *data sweat* and *data sense*, and Peter Carew's (2018) *total data*. This highlights that the use of the term *data* relates to a diverse set of practices involving individual bodies, collectives and technologies. Emerging from surveillance studies, the concept of data double has gained considerable traction in existing theory and practice.

It defines a parallel stream of data *about* individuals that is captured, stored and categorized by data technology companies (Hedenus and Backman 2017; Lyon 2007). The idea is that every interaction with digital technology generates data about individual digital activity, which forms a *data double* running parallel to the body from which it was generated. For instance, GPS and search data when a person searches for a local restaurant. The concept of data double has gained currency due to the way it points to the surveillance capabilities made possible through engagement with digital technologies, the power and control of which often lies in the commercial sector. There is no doubt some validity and explanatory power to the concept. However, its power is limited in terms of understanding the *deeper* more integrated role of data in the operation of living beings (Douglas-Jones 2021; Tucker 2021). In the current paper, a general concept of data is drawn upon that addresses the prevalence of data generation technologies captured through the concept of datafication (Douglas-Jones 2021). Simondon's notion of information can help to expand current understanding in terms of avoiding a focus on the *content* of data, and how it relates to human bodies, and the subsequent impact of the data practices that emerge. Instead, Simondon's notion of information helps to define the operation of data-body relations without reducing such activity to the human body as the content creator for data capture.

The ambition of Simondon's philosophy is significant, as it aims for a general theory of individuation that provides insight across human, social, biological and physical elements of the world. Such general philosophies can fall short in terms of the specificity of their explanatory power, but for Simondon, at least when it comes to human individuation, a specificity does exist in the form of emotion and perception (the latter is not a focus in the current paper, but see Keating (2019) and Scott (2014) for more detailed discussion). Simondon's notion of information provides a valuable way to frame the operation of data as part of systems of practice and genesis. The next section will discuss the novelty of Simondon's notion of emotion and how it can align with the notion of information when referring to *psychic individuation*.

Affectivity, emotion and the subconscious

Simondon was writing in a context of a focus on cognition and rationality, in which Gestalt Psychology was prominent (Combes 2012; Simondon 2009; Simondon 2020a). His issue with Gestalt Psychology was its reliance on the notion of an individualized conscious *whole* that perceives, rather than on the processes through which the individual becomes (Scott 2014; Wrbouschek and Slunecko 2020). Moreover, he considered Gestalt Psychology to ignore subconsciousness due to its focus on perception. The other main tenet of psychological thought at the time was psychoanalysis, which Simondon argued suffered from the same problem of being premised on the notion of a completed *whole* of the individual, albeit with a focus on the unconscious rather than Gestalt Psychology's focus on consciousness (Combes 2012). Simondon argues that affectivity-emotivity (a generic term pertaining to what he will distinguish as affectivity, affection and emotion) operates as a layer of sub-consciousness. This is not something that operates entirely *interior* to an individuated being – but it is the centre of individuality for Simondon, and therefore the spatial and temporal *location* for action and modifications through which individual beings persist as singularities. Consequently, emotion is not

one dimension of the human condition operating according to a categorical system of distinct feelings, such as love, surprise, anger etc., but rather operates as relations with oneself as a living subject, and one's relations to others as always-already part of collectives. The individual-collective relation is key to Simondon's philosophy, with emotion playing a vital role on the side of one's relationship to oneself as a subject being. This means emotion is not something solely *expressed* by bodies that can be identified and categorized by technologies such as those designed to detect emotion via physiological expression/s.

For Simondon, emotion is more integrated in terms of the constitution of the subject being, with emotion and affect as mediating forces – operating as exchanges of information in the ongoing operation of the individual as a *being in relation* or what he names *psychic individuation.* Emotion and affect are core elements of Simondon's ontogenesis, which does not conceptualize information in terms of communication between two (or more) established forms, but rather places analytic emphasis on the genesis of individual life. This is his philosophy of individuation. Affectivity is the intermediary that 'communicates its internal states' – and can establish a relation between individuation and pre-individuation – the *excess* from which individuals emerge and become. These are fundamentally incompatible though, so there will always-already be a tension for affectivity as the intermediary. Furthermore, the stability of an individual's existence (i.e. its identity) is a metastability operating through a temporal persistence. The 'individual is not a being but an act' (2020a, 208–9), with perception dealing mainly with 'structures and functions already constituted within the individuated being' (2020a, 280), and as such does not have spiritual content. Affectivity on the other hand, does have a content of spirituality as it 'indicates and comprises the relation between the individualised being and pre-individual reality' (Simondon 2020a, 280). The collective (i.e. pre-individuality) is necessary for emotion to be actualized. In affectivity there is 'continual pre-emotivity', in the form of potentialized emotion. But emotion does not emerge from affectivity 'by means of simplification or abstraction' (Simondon 2020a, 286), it needs an 'extra being'. It is emotion-affectivity that is present in the relationship between individuation and pre-individuation within the subject-being. They are the movement between the *natural undetermined* and the *here and now* of actual existence.

It is through affective-emotivity that the undetermined moves/rises/amplifies *into* the here and now of individuations – a rise that will incorporate the subject into the collective. Positive affective states indicate when this synergy works productively, with negative affective states indicating a poor synergy. The relation between affection and emotion is transductive, in terms of individuating through an incremental process of tacking between regions that are stabilized (having 'received form') and those that remain metastable with transformative potential (Simondon 2020b, 692). Simondon further details the prominence of the role of affectivity-emotivity in the operation of individuation through offering an affectivity, affection, emotion triptych. Affectivity operates primarily as pre-individual energy, which could also be called *becoming.* This is the energy of life that is not already captured in the living being, and indeed, it cannot be fully captured, because it operates on a different level of *potentialized individuation*. It is an energy as it is a source of individuation, as affectivity 'indicates and comprises this relation between the individual being and pre-individual reality' (2020a, 280). Simondon does not think of this

solely in spatial terms, as individuation is primarily characterized in temporal terms; '[A]ffectivo-emotivity is a movement between the natural undetermined and the *here and now* of actual existence' (2020a, 278). Affections are the next dimension in the individuation process, as they operate to make the being 'coincide with itself' – that is they connect temporally the plurality of affectivity, which is not specified in time (nor space) with the living being.

This is not a simple process as it is fundamentally impossible for the entirety of becoming to be temporally absorbed in the living being – an individual cannot realize the entirety of the collective. Affections bring the preindividual and individual temporally closer, but the fundamental inconsistency remains. The plurality of affections is too much to be absorbed as the living being, and as such another phase is needed, that of emotion. Affectivity and affection operate as a tropistic plurality – a constant pressure and draw to multiple orientations to external stimuli and forces. At this stage emotion emerges as a way to find some points of convergence and adhesion to ensure the individuation of the living being. This is not a progressive process towards the completion of the living being. This is because emotions operate as forms of metastability. They emerge as the unity of a living being which ensures its continuation as a singularity – as the temporal persistence of a succession of *here and nows* in the form of a living being as an individual. Therefore, Simondon talks of emotion as *structuring movement* because it *discovers* a unity, a synergy that exists as the persistence of the temporal singularity of the lived being. Affection is what emotion unifies – it is the 'organisation of affections' (2020a, 290). Within his philosophy of individuation which prioritizes the genesis of living beings rather than the *finished form*, it is emotion that operates as the temporal unity of the individuated being. This is not a straightforward process that once *complete* requires no further energy. Instead, the persistence of the living being is demanding on emotion as it must retain a *certain closure* through *clinging* to the present and resisting other emotions. Affections are not subject to the same pressures as they do not have to retain the unity of the living being – they exist to orient the living being to the *vaster becoming* that exists alongside its presence. In the next section, I will discuss how Simondon's notion of emotion can valuably coincide with the notion of information to highlight our relationship with digital technologies.

Emotion, data and psychic individuation

The rise of datafication in everyday life means that data are increasingly part of processes of individuation, including both the relations one has with oneself and simultaneously the relations one has with others. This presents data as more embedded in our everyday environments – meaning that data are studied as part of emotional life – not solely as expressions of interior states that can, for example, be categorized by emotion-recognition technologies. Key to efforts to understand relations with data and contemporary technologies is drawing attention to the difficulty of capturing in entirety the operation of data, either in relation to the body or a technology. What emerges are notions of excess and overspill (Douglas-Jones 2021), relating to an additional layer of value extraction, or data as currency through practices of commodification. This moves beyond a technical description of data representing aspects of bodily activity towards an understanding of data generation for the commercial motivations of organizations (Ellis and Tucker 2020). What emerges from the interaction of body and technology that generates data is *more than* the sum of its parts.

Concepts have emerged that attempt to grapple with the notion of a more *digital* subject (Douglas-Jones 2021; Goriunova 2019). These can be distinguished from other concepts of data (e.g. data double) as they attempt a more specific analysis of how data processes and algorithmic orientations, such as modelling and correlation (Goriunova 2019), feed into the operation of individual lives. This is important as it helps to avoid a homogenizing of data practices, and instead offers notions of diversity and variability in what constitutes data practices. What is not a focus in existing studies of *data as excess* is a sense of how data generation operates in parallel with emotion in the operation of individual subjects. An approach is needed that offers a level of specificity about the co-operation of data and emotion in the constitution of individual subject being.

I argue that Simondon's notions of information and emotion can provide valuable conceptual insight here. A focus on data generating practices operating *beyond* the boundaries of bodies and technologies can be a valuable perspective in terms of the data dimension of emotion and data relations. Emotion here is not feeling *about* data practices, but rather feeling *with* data in fluid processes of co-creation and becoming. These are *emotional* relations – data and emotion are not separate but rather become entwined in the unfolding of the metastable relations that constitute the living being. Simondon's non-essentialist and temporal concept of emotion provides a level of specificity, and in doing so, can provide significant insight as to the operation of individuality in the data-rich environments of everyday life. Notions of information and emotion in Simondon can operate to define a future-oriented transformative potential through which the individual subject temporalises as a singularity, with emotion and data coinciding as the media in and through which relational-processes individuate. The transformative potential of data practices understood as *in-formative* can destabilize the living subject, with emotion operating to stabilize through providing temporal consistency.

Key here is the move from a predominantly *spatialized* way of thinking (as per information theory, and Gestalt Psychology) towards a *temporalized* understanding of individuation. This is needed for Simondon because a spatialized mode of thought does not encapsulate the role of *potentiality*, which is vital to the onto-genesis of individuation. Simondon captures this when stating that 'what topology lacks is the consideration of potentials' (2020a, 263). What is important is the role of metastability which operates and considers 'the processes of exchange between spatial configurations and temporal sequences' (2020a, 263). This conceptualization has individual living beings as singular temporal endurances, not stable spatial entities – although this does not operate in a binary 'either-or' mode. The model of data recruited by emotion detection technologies, for example, falls short in terms of a Simondian mode of thinking, as it is too spatialized (and essentialist) to account for the temporalities of data-emotion individuations. To understand data practices in this context is to consider them as temporal processes that can simultaneously operate individually and collectively. For social science understanding, this means that data practices need to be understood as part of emotional temporalities. Simondon does not specify the content of the operation of emotion. My argument is that the operation of emotion as the temporal persistence of the living being is undertaken increasingly in concert with data. But not data as *information,* but rather as *emotional in-formation*, which constitutes the operation of psychic individuation. This does not mean that emotion is becoming more digital – that would be an unhelpful simplification. Rather, we can consider the temporal singularity of emotional life operating increasingly in concert with data.

This can be further contextualized in relation to the notion of transindividuality for Simondon, which is an overarching principle of his general philosophy of individuation. Transindividuality names Simondon's main objective to move *beyond* existing disciplines of psychology and sociology, of the psychic and collective. Simondon did not view the operation of individuated life as emerging *from* existing notions of individual or social, psychological or collective. The transindividual is that which '*surpasses the individual by extending it*' (2020a, 314), it is not exterior to the individual in terms of being part of a collective, but it does extend beyond the individual to a certain extent. It manifests not as a form of pure exteriority 'but as a dimension of excess relative to the individual' (2020a, 314). Individual life is not a combination or relation between psychic and collective as pre-existing domains of life. Instead, notions of psychic and collective come to operate *as* forms of psychic and collective individuation, for which notions of information and emotion are central processes. Key here is the notion of metastability, with emotion acting as the operative force at work in structuring the movement of a subject being, with data as the medium of change and transformation – that which *exceeds and yet presses upon* the individual, necessitating the emotional response. In this sense, emotion can be considered to operate in tension with the transformative potential of data. Emotion operates as the tension of meta-stabilizing affections that are by necessity unspecified, multiple and *more than* the individual subject being. This *more-than-ness* is inherent to the individuation in terms of genesis, relationality and metastability. Emotion names this process in terms of experiencing one's persistence as not entirely reducible to one's own individual body. As such, emotion does not designate a specific substance or form for Simondon, but rather a mode of becoming that is central to the operation of the subject being.

The notion of *emotional in-formation* offers significant conceptual insight in terms of emotion operating to singularize a temporal being, and datafication framed as operating across the three domains of affectivity, affection and emotion. Therefore, data become bound up in the tensioned activity of the incompatibility of individual and collective that is the challenge that emotion operates to address. As an example, consider the challenge of neatly demarcating what counts as individual, and what is collective, in terms of data generated in relation to online forums. Individual posts can be considered individual, but once posted they form part of the collective data of the forum as it is visible across forum users' timelines. When people subsequently comment on the post this is not only an individual response to an individual post but is a response generated through the operation of the collective data of the forum that made the initial post visible to the responder. This point can extend recent non-representational analysis of relations between affect and digital technologies. Susanna Paasonen (2021) interrogates the affective impacts and operation of relations with digital technologies through the concepts of dependence, distraction and boredom. These unpick several ways in which a binary 'good/bad' analysis over-simplifies an understanding of affective relations with digital technologies. Paasonen frames *distraction* as a valuable lens through which to analyze the ambiguity of social media activity, which operates as a temporal multiplicity in terms of 'the present sense of things going on bleeds into the immediate future as anticipation of events, updates, and fascinating nuggets of data to come: distraction, after all, involves both the very present and that which is almost at one's fingertips' (2021, 73). The anticipation operates as a singularizing force of individuation, but without being reducible to the materiality of a given present. Instead, the present is

anticipatory of 'fascinating nuggets of data to come', which is a singularizing meta-stabilizing force, but one that is never *finished*. This principle can be seen in many data practices, not all of which are consciously engaged with, which demonstrates the value of Simondon's stipulation that emotion operates at the layer of sub-consciousness – it is a more general mode of operation of the existence of individual as an enduring temporal being. The argument is that emotion operates increasingly in relation to data generation practices, rather than being captured and categorized by data in a representational sense. What does this mean for contemporary social science theory and practice?

1. It contributes to the critique of claims that technologies such as those focused on emotional-recognition can capture and interpret emotional activity – which can be particularly pernicious when claiming a greater authenticity for technologically-driven interpretations than human ones due to technologies having the capacity to categorize activity outside of human capacity (e.g. so called 'micro expressions') (Ellis and Tucker 2020).
2. It provides a constructive engagement with debates regarding the increasing power of datafication, without falling foul of a form of technological determinism, or getting stuck in conceptual cul-de-sacs regarding the emotional capabilities of technologies themselves (i.e. can machines feel?)
3. It provides specificity as to the relations between data and psychosocial life that is neither reductionist nor essentialist in respect to bodies and data. This is due to data and emotion being considered to operate on a continuum rather in terms of two bounded realms of ontological activity. The more integrated approach is valuable as it transforms the analytic unit to incorporate a notion of individual and collective operating in concert in the constitution of the individual subject being.
4. The role of emotion as core to psycho-social processes is important in a world in which *the emotional* can still be seen as the poor cousin to *rationality* (with all the problematic reductive and essentialist thinking that comes with this distinction).

In conclusion, the argument developed in this paper is one that relies on the idea that data are in-formational, future-oriented and unspecified-in-advance forces of transformative potential. Data are multiplex, which operate with a specificity that emerges in the form of particular algorithmic and organizational demands (Goriunova 2019). Data relate to individual beings, but not exclusively, and once generated are not mappable to individuals, nor solely representative of them. The notion of emotional information is valuable as it offers a definition of data as multiplex and future-oriented, that aligns with emerging Simondon-influenced work on individuation and data (e.g. Coté and Pybus 2016). The contribution of the current paper is to develop this work through a specific focus on emotion, which is significant in terms of contemporary understandings of emotion and data. Emotion and data as information are framed as key processes in the operation of individuating singularities, that we commonly think of as individual experiences. A focus on emotion speaks specifically to the psychological, which Simondon frames as psychic individuation. Emotion acts as a stabilizing force through which an individual persists as a singularity. This is not reducible to a set of inherent or interior properties that can be identified and categorized by technologies. This is the defence against the validity and reliability of essentialist models of emotion

and data. The latter are seen to operate as more fundamental elements in the ongoing systems in and through which individual and collective life individuate. Emotion and data are not the only operating forces at work, but they are prominent ones, and this insight can help to understand at a deeper level the potential impacts of new technologies that claim to be able to *read* data through physiological expressions.

The field of digital emotion is currently dominated by work that frames data as representative of emotion, and therefore within the purview of algorithmic interpretation. The science underpinning these technologies has been extensively criticized, but this has not fully captured the potential scope of their impact, which is important given the rapid increase in their use. The current article has argued for an approach that provides insight regarding the wider social and psychological impacts of technologies such as those designed to detect emotion. To date, criticisms as to their scientific status are not arresting their increased use. An approach drawing on Simondon's notions of information and emotion offers a specificity in understanding that captures the non-reducibility of emotion to physiology and the inherent relationality of the operation of emotion as central to the metastability that is the subject being. To return to Miéville's slake-moth – perhaps the allegory should not be limited to the idea that the slake moth captures individual emotions, but rather that it represents data-seeking technologies that work in concert with bodies in the operation of life that is simultaneously individual, collective, in-formational and emotional.

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