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THE SUBJECT OF CIRCULATION: ON THE DIGITAL SUBJECT'S TECHNICAL INDIVIDUATIONS

The concept of the digital subject proposes that online subjectivity is a mediated construct. This article extends this concept by arguing that online subjectivity is not a property of human users, but of digital subjects enacted in circulating data. It develops the digital subject by, first, using Phillip Agre's concept of "grammars of action" to argue that computational architectures exclude humans from the position of the user; and, second, using Gilbert Simondon's and Yuk Hui's philosophies of technology to posit the digital subject as a determinate technical entity that, as per Hui's re-working of Simondon, inhabits a "digital milieu". Online, this digital subject inverts the human-technology relationship. It individuates by entering circulation, excluding us from individuating whilst individuating us in turn. This article expands upon this claim by analysing projects by Amalia Ulman and Zach Blas and their thematisation of visibility, identity and authenticity in online subjectivity.

KEYWORDS

Subjectivity; Digital Media; Circulation; Individuation; Simondon; Post-internet Art

I. THE SUBJECT OF CIRCULATION

It's platitudinous to claim that the internet has become one of subjectivity's major contemporary sites. But the question of what subjectivity becomes once it moves

online continues to be a pressing one. Through its massively distributed services, its constitutive platforms, and the devices we use to access it, the internet exercises an increasingly pervasive influence on individual and collective subjectivity. The internet puts subjectivity into circulation in and as data—and in the circulation of data, subjectivity is subject, in turn, to technical processes that invite alternate conceptions of what the subject is and how it becomes.

In this article, I want to adopt and extend Olga Goriunova's concept of the "digital subject" (Goriunova, forthcoming; see also Lialina, 2017) to argue that the contemporary internet creates the conditions for a mode of subjectivity that emerges in and as circulating data. In Goriunova's formulation, the digital subject is "an abstracted position, a performance, [a] constructed persona from data, profiles, and other records and aggregates" (2). This concept encompasses recognisable aggregates, like social media profiles; but it also extends to more ephemeral aggregates, like advertising profiles, alongside others we might not think of as "subjects", like credit scores or profiles created by government services. These aggregates are often poor representations of the humans to which they refer. Conversely, they are arguably irreducible to the humans whom they predicate. The digital subject is not a poor facsimile of a particular human subject. Its very insufficiency opens up the possibility that it can be conceptualised as a substantive and concrete mode of subjectivity that isn't strictly human, but something else. As I want to argue, what becomes—or, "individuates" (Simondon, 1992)—online is not *you or us, but the digital subject itself*.

To develop this claim, this article will combine theoretical reflections informed by recent media theory and a particular strand of the philosophy of technology with analyses of two recent artistic projects that thematise online subjectivity. In her conceptualisation of the digital subject, Goriunova further argues that “[d]igital subjects are something arising out of data generated about something, and become active in the computational infrastructure that enacts something else in turn” (13-14). This proposition suggests that the digital subject can be located in between the subject who interacts with distributed online services and the circulating data that these services process. In media theory and in popular parlance, this subject is typically referred to as the user. Drawing on media-theoretical analyses of platforms and interfaces, I want to argue that this user is, itself, a construct. The user is prefigured by computational processes as a position that can be assumed by a human subject. On the other side of the interfaces that make interaction with these services possible, this position is designed to facilitate the capture and aggregation of the data we produce. These techniques, which Phillip Agre calls their “grammars of action” (1994), introduce a gap between subject and action, subjectivity and its construction, that’s indicated by the “user”—and that’s occupied by the digital subject. This article will propose that digital subject who occupies this position mediates the individuations of the human user whom it predicates.

Mediation has numerous meanings across the humanities and social sciences (see Kember and Zylinska, 2012). I mean to adopt it in two, broadly media-theoretical senses. The digital subject is *mediate*; that is, it’s in between, occupying a position between the human(s) it refers to and the data they produce. But as a substitute for the—human—user, it also acts as a *mediator*, actively informing these users even as

it's constructed as an aggregate out of the data they produce. This proposition is predicated on treating the digital subject as something more than an index or representation of a human user. Drawing on Gilbert Simondon's philosophy of technology, I want to argue that the digital subject is a concrete—albeit still provisional—construct: what Simondon calls a “technical entity” (2017). To conceptualise the digital subject in these terms, this article will rely on Yuk Hui's recent reworking of Simondon's philosophy of technology for digital media. This concept allows us to conceive of the digital subject as a *technical* subject that individuates in circulating data. Or: as the subject of circulation.

In making this claim, I don't mean to valorise the technical agency of this entity at the expense of the human subject. This conception of subjectivity proposes, rather, that the internet creates the conditions in which subjectivity can be expressed by technical entities. Whilst it resonates with recent conceptualisations of subjectivity that emphasise its enmeshment with technology proposed in this journal and elsewhere, it departs from them in several crucial respects. This concept is not compatible with recent, new materialist ontologies, which treat technology as matter. Simondon differentiates between technical materiality and the materiality of “inorganic” entities, because the former expresses recursive forms of self-organisation that can't be explained through their materiality (2017; Stiegler, 1998, 57). Nor is his conception of technology predicated on the critique of anthropomorphism that undergirds strains of “posthumanism” (see Callus and Herbrechter, 2012). The theoretical framework that I want to propose avoids invoking a totalising conception of technological systems that informs subjectivation—either directly, by channelling subjects' desiring production; or indirectly, by eliciting its

subversion (Wiley and Elam, 2018; see also Kittler, 1999). The concept of subjectivity I mean to outline using the digital subject allows us to apprehend and critique the new modes of online subjectivation—or individuation—that the internet makes possible. These modes might be *technical*, in the strong, conceptual sense, but they arguably give us critical purchase on the cultural politics that are emerging around distributed online services that are engineered to traffick in subjectivity.

To illustrate the political stakes of this concept, this article will develop its theoretical framework alongside engagements with two artistic projects: *Excellences and Perfections* by Amalia Ulman and *Face Cages* by Zach Blas. This decision to engage with artworks is deliberate. Online, subjectivity is enmeshed in technical processes that are complex, distributed, opaque, and, often, proprietary. In their recent media-theoretical enquiry into interfaces, Christian Ulrik Andersen and Søren Bro Pold argue that artistic projects make this complexity available for theorisation and analysis (2018). These projects' respective themes of visibility and objectification illustrate how digital subjects are constituted through techniques of data capture and aggregation; how these digital subjects individuate in and through data's circulation; and how their individuations mediate our own in turn—sometimes to our benefit, or sometimes to our detriment. To apprehend these politics, we arguably need to be able to understand both how data is captured and circulated online and how the circulation of data informs new modes of subjectivity.

This article's concern in theory and philosophy and its analyses of artistic projects converge in circulation. Circulation is a concrete technical process: online, data circulates. Whilst circulation is widely invoked describe the processes by which data,

information, or media are spread, sent, circuited, returned, or transmitted across the humanities and social sciences, it's arguably not clearly articulated as a concept of *media* (see Wark and Wark, forthcoming). This article's overarching premise is that this process is *constitutive* of the digital subject. In proposing that the digital subject emerges in and as the circulation of data, I mean to demonstrate how something like a digital subject emerges in circulation and to intimate why this term is crucial to the conceptualisation, analysis, and critique of our contemporary media situation. The concept of the digital subject allows us to ask a crucial question: *After the internet and in circulation, to what uses can subjectivity be put?* This question is shadowed by another: *When subjectivity enters circulation, what else might it become?*

II. SUBJECT ≠ USER

The basic proposition of the digital subject is that this mode of subjectivity emerges in the gap that distributed online services open between us and the data constructs that refer to, represent, or even act for us online. To begin to develop my proposition that the digital subject individuates in and as the circulating data that occupies this gap, I want to adopt the media-theoretical terminology of the "user" to distinguish between the modes of subjectivity that we express as users of distributed online services and the—technical—modes of subjectivity expressed by the digital subject.

In media theory, it's typical to refer to subjects who interact with media or computational processes as users (Lialina, 2012). This conceptual language is much less common in other humanities and social sciences disciplines—other than, perhaps, design theory. Its use in media theory originates in the applied computer

science discipline of Human-Computer Interaction, where it denotes a formal component of computational programs (Bardini, 2000). Through the pervasive cultural influence of big technology companies, it's since become a part of popular parlance: distributed online services have x number of "users", for instance, or our login credentials for services or for our personal devices identify us as their "users". In the broader discipline of media and communication studies, scholars are more likely to refer to the subject of distributed online services or computational processes using terms like "the self" (e.g. Papacharissi, 2011) or "identity" (e.g. Marwick and boyd, 2011). Scholars of digital subcultures have adopted other, more specific terms for these subcultures' modes of subjectivity: the troll, for instance (Phillips, 2015). But the user arguably retains a conceptual purchase on emergent modes of subjectivity that these other terms lack.

As a term for the subject who interacts with distributed online services or media devices, the user emphasises this subject's relationship with *interfaces*—that is, with the points at which they access these services or devices. This emphasis is crucial, because it foregrounds the active role that media's interfaces play in shaping and constraining our interactions with them (Hookaway, 2014). Each of the above conceptions of the subject is distinct and each emphasises different aspects of our relationship to technology. But what they share is *where* they situate the subject: this subject is always situated on *this* side of the interface, always pictured on *this* side of the screen. Online, subjectivity is situated at specific sites: in profiles, home pages, descriptions, and biographies; sets of relations with other users, like friends lists, followers, and contacts; relational markers, like tags, hashtags, and notes; emotional signifiers, like emoji, statuses, and image filters or overlays; locational markers, like

geo-locational tags; and so on. For the human user, these sites might be treated as algorithmically-mediated representations of their actions, interactions, relations, or data. On the other side of the interface, distributed online services constitute the digital subject as an aggregate of the data captured by the actions that a user takes. The interfaces we use to interact with these services, platforms or devices act as intermediary layers between us and them. Crucially, they also mediate the location of the user at or between these sites.

Goriunova's digital subject proposes that distributed online services locate subjectivity on the *other* side of the interface. The concept of the digital subject responds to a constitutive ambiguity created by this relationship: the subject of a computational interface is not necessarily a human user, or indeed a human at all—rather, it's the occupant of a position that these interfaces define. The concept of the user can help us to further explicate why. One particular media-theoretical take on this concept suggests that the user can be understood as a construct that produced by computational processes for us to occupy in order to make interaction with them possible, positing the user as a “user position”.

In his study of the figure of the user developed in the field of Human-Computer Interaction, Thierry Bardini asserts that computational interfaces are designed with a “representation of the user” from which the computer learns how to relate to actual users (2000, 104). For Bardini, this representation is, originally, of the designer: their subjectivity shapes the eventual subject position the user can occupy. This claim resonates with Adrian Mackenzie's approach to studying modes of subjectivity that emerge with the proliferation of predictive computational processes. For Mackenzie,

the actual subjects who develop predictive software function as “test cases” that we can use to understand how we might negotiate the automation and generalisation of anticipation in media technology (2013). Without discounting the artefactual persistence of human subjectivity in the design of computational processes, the user concept introduces another way of conceptualising emergent modes of subjectivity. The interfaces we use to access distributed online services establish the terms of our interaction with them. At the interface, *our* agency is constitutively entangled with the computational processes that enable it. We can push this claim even further. As Benjamin H. Bratton argues, “the *User* is not a type of creature but a category of agents; it is a position within a system without which it has no role or essential identity” (Bratton, 2015: 251, emphasis original). The interface is an abstraction that mediates between the user and computational processes; but so, too, is the user. It’s what Bratton calls a “user position”. This position need not be situated at the point of contact between user and device or service, the screen.

The archetypal screen is one interface layered atop of several—what’s often referred to as the “stack” hierarchy of layers of computational abstraction that’s used to structure computational processes (Straube, 2016). Interfaces are established wherever computational layers of abstraction meet. As Matthew Fuller and Florian Cramer argue, interfaces are designed to “describe, hide, and condition the asymmetry between the elements conjoined” (150). This asymmetry extends beyond the human-device relation to other interfacial relations between other component layers of computational processes or distributed online services, which “themselves articulate, filter, and organize the activities modelled and modulated by the interface” (151). As Fuller and Cramer put it, this means that “[t]he distinction between a “user

interface”, an Application User Interface”—used by software to query other software—“and a computer control language is purely arbitrary” (2007, 150). What we call a “user” *typically* mediates between us and a distributed online service’s surface layer. But computational processes multiply interfacial points—and, therefore, gaps in which a user position might be constituted. This concept is useful because it helps us to understand just where digital subjects are constituted. My proposition is that the “user position” identified by Bratton formalises the space that’s filled by Goriunova’s digital subject.

The digital subject allows us to think modes of subjectivity that emerge after the internet as—provisional, limited—mediators between us and these services. More radically, I want to claim that this construct *can’t* be human. Interfaces are designed to facilitate interaction, but they’re also designed to obscure. They “black box” these services, making them easier to use whilst obscuring their proprietary operations (Wark and Wark). They also obscure the constructed nature of the position that the user of a particular distributed online service occupies. The concept of the digital subject offers us a way to locate subjectivity on the other side of the interface—and to understand the role it plays as an in between. However, what the digital subject *is*, is not just defined by what it does—or that it interfaces. This claim risks reducing subjectivity to the exercise of agency. My proposition that the digital subject individuates and individuates us in turn requires more conceptual work. The digital subject is constituted in data captured by distributed online services, exposing it to a degree of complexity that makes it more than a representation of a particular user. How these techniques work, I want to turn to Amalia Ulman’s artistic project, *Excellences and Perfections*.

III. CAPTURE

Amalia Ulman staged *Excellences and Perfections* was a four-month-long performance conducted on the Instagram platform in 2014. For three months, her account was given over to a pre-scripted narrative arc enacted using images, captions, tags, and through interactions with other users. In broad strokes, this narrative is relatively simple: a young woman breaks up with her boyfriend, responds by acting out in ways that are judged to be normatively-questionable, before renouncing this life in a confessional act of contrition and adopting a healthier lifestyle—all documented on the artist's personal Instagram account. Taken as a whole, *Excellences and Perfections* fits common archetypes. Ulman argues that its three stages exemplify the three character tropes that are available to women online: the “cute girl”, the “sugar baby”, and the “life goddess” (Kinsey, 2016). What makes it interesting, for our purposes, is that it helps us to apprehend how a digital subject is constituted using platform-based techniques of data capture.

Instagram is an example of a platform, the computational architecture that's probably most often associated with new modes of online subjectivity. Many of the big services that define the contemporary internet are platforms—from social media services, like Facebook; to retailers, like Amazon; to search services, like Google. Platforms are designed to be populated by content generated by their users. As Anne Helmond puts it, platforms “decentralize” the production of data to users, whilst they “recentralise” the collection, aggregation, processing, and exploitation of that data (Helmond, 2015: 6). Importantly, platforms allow varying degrees of third-party

access to the data they aggregate, so that developers can build other applications into their environments, from games and quizzes right through to scripts for commercial, academic, or even political research. This lends them what Helmond refers to as “programmability” (2015). The result is a dynamic computational environment shaped by the interplay between the data that users produce and its processing by platforms. Platforms represent a major new way to monetise and exploit the decentralised production of data. But they also engineer new forms of sociality—and act as one of the digital subject’s major sites.

Platforms centralise data using techniques of capture that Phillip Agre calls “grammars of action” (1994). Grammars of action pre-structure what we can do on platforms and with other computational processes in order to easily turn our actions into data. Each act of relating or interacting we take on a platform—liking, sharing, friending, even clicking through to a link—simultaneously facilitates an action and produces standardised “data point” by allowing the “action and capture” to “happen simultaneously” (Gerlitz, 2017, 242). Perhaps counter-intuitively, the coincidence of action and capture engineered by grammars of action opens up the gap that the digital subject occupies. The functions of Instagram, the site of *Excellences and Perfections*, is comprised of grammars like fields in which images can be uploaded; comment boxes; hashtags; sharing functions; and so on. Each action we take at each of these sites is captured and then, crucially, processed in order to constitute a digital subject—that which *uploads, comments, tags, shares*, and so on. Online, subjectivity is captured and processed before its constituted. Moreover, the pre-formatting of data facilitates its *circulation* within platforms and between distinct distributed online services (Helmond, 2015, 6). Grammars utilised in distinct

computational architectures can be “folded in to one another” across platforms by clients, scripts, syndication, and other techniques (Gerlitz, 2017, 241-242). When our data is captured by these grammars of action, it’s exposed to the potential of entering circulation and being processed and recapitulated; when it’s aggregated, its subject to higher-order operations that recursively inform how digital subjects are constituted. The “programmable” platform scales the operations that the digital subject is subject to as occupant of a user position. As more data is produced by users, entered in to circulation, and circulated beyond particular platforms, subjectivity arguably becomes something else; it becomes technical.

We can see how these processes work by returning to *Excellences and Perfections*. Taken at face value, Ulman’s performance demonstrates how the Instagram platform’s capacity to represent a “you” can be performatively misused. To constitute the “cute girl”, Ulman uploaded selfies and favoured pastel tones; to constitute the “sugar baby”, Ulman’s selfies became more revealing and her posts made more references to money, even suggesting—without ever actually revealing—that she’d had plastic surgery; and to constitute the “life goddess”, her images included the conspicuous consumption of healthy foods, an emphasis on exercise, and a liberal use of inspirational quotes. They seem to exploit Instagram’s representational functions to construe an alternate subject. But there’s arguably more to this performance than its narrative content or a critique of social media that might be ascribed to it.

Ulman’s performance constructs its digital subject using the grammars of action available on the Instagram platform. To mark out the beginning of her performance,

Ulman uploaded an image emblazoned, cryptically, with its title—“Excellences and Perfections”. Retroactively, this image marks the commencement of the performance and a period of hiatus for her usual output; or, the beginning of its narrative arc. When this post is first made, however, it can only have that specific meaning for Ulman. The persona she presented can’t be grasped in its fragments, but only makes sense in and through its cumulative actions—and the grammars that shape them. The digital subject it constitutes is only present in process, emerging in the user position that these grammars construe. Crucially, these grammars encourage particular kinds of behaviour: to upload more, to interact more, to be interacted with more, in turn; or, to be *visible*. Online, visibility is not merely a function of uploading a picture that tells a story. It’s the outcome of computational processing and its informed by grammars of action. The digital subject *Excellences and Perfections* presents is only provisionally present as long as it’s visible. What this performance dramatises is how platforms mediate visibility,

I want to explore the cultural politics of visibility that subtend the digital subject in the section after next. Before doing so, I first want to provide more theoretical support for the digital subject itself. The concepts of the user position and grammars of action open up a gap that’s filled by the digital subject. However, these concepts provide us with minimal insight into what it means for a digital subject to become—or, indeed, whether it can be treated as a subject. In the next section, I want to turn to the work of Simondon and Hui to place these reflections on the digital subject into a technical-philosophical framework that will support my claim that the digital subject individuates in circulating data and that it individuates us in turn.

IV. TECHNICAL BECOMING

After the work of Simondon, Hui, and—to a lesser extent—Bernard Stiegler, my proposition is that we can conceptualise the digital subject as a “technical entity”. This proposition is an ontological one. In making this claim, I don’t mean to suggest that digital subjects’ modes of subjectivity are homologous to humans’, or to replicate a form of “panpsychism” (Shaviro, 2014). Nor do I mean to displace other, human or post-human, modes of subjectivity made possible by the internet. For these philosophers, technical entities are neither proxies for human intentionality nor reducible to the matter that instantiates them (Stiegler, 1998, 1-3). Technical entities belong to a different category of being altogether: they possess what Simondon refers to as a “third mode of being”, expressing a wholly other kind of self-sufficiency (2017). Strictly speaking, the proposition that the digital subject can be conceptualised as a technical entity is not compatible with Simondon’s philosophy. To support this claim, I want to draw heavily on Hui’s recent reworking of Simondon’s philosophy for digital media. In general terms, it relies on synthesising two distinct components of Simondon’s philosophy: his concept of a third mode of being; and his concept of subjectivation, which he refers to as *individuation*. As I want to argue, this theoretical labour promises to help us to understand not only what a digital subject *is*, but why we might accord subjectivity to a technical entity.

In Simondon’s philosophy, technology secures its own distinct form of sufficiency once it reaches a certain level of complexity. Complex technology differentiates itself from mere tools when it begins to regulate its operations in relation to its immediate environment (2017, 50-51), which Simondon follows Georges Canguilhem in calling

its “milieu” (see Canguilhem, 2008). An example would be a data farm. Data farms are storage centres full of rack-mounted computers organised into stacks and laid out in rows. Packing so many computers together generates large amounts of heat. To ease the cost of cooling all these computers, they’re often placed in naturally cool environments: in old bunkers, underground, or underwater, for instance. Their external environments are not just incidental to their design or how they function—they become components of data farms’ operations. In Simondon’s language, these environments become internal and necessary components: what he calls an “associated milieu” (2017, 50). In defining their operations in relation to and apart from their environments, technical entities express what Simondon calls “internal coherence”, or a capacity to regulate their external relationships (2017, 50-51). In general terms, Simondon accords complex technologies a form of *agency* that’s not reducible to human design or to their materiality, but is a function of their situated, concrete operativity.

In claiming that the digital subject is a kind of technical entity, my proposition is that it’s not just a representation of the human subject that it predicates, but that it expresses a technical mode of being possessed of its own sufficiency. But this claim doesn’t make a digital subject a *subject*. In Simondon’s conceptual language, the subject is defined by another capacity again, which he articulates using the term “individuation”—becoming. Simondon developed his concept of individuation through a critique of the premises underpinning classical ontology’s conceptualisations of being. Its basic point is simple: we classically explain being through the “existence of a first term”, like substance or one of the dyad form-matter; but in doing so, we foreclose our ability to think it in its becoming (1992). In response, Simondon argues

that we can only grasp what an individual is by abjuring explanatory first terms and thinking it as it becomes—or, *ontogenetically* rather than ontologically.

To disentangle becoming from being, Simondon proposes a philosophical framework that posits individuals at the nexus of a set of unstable and constantly-negotiated relations. Individuations emerge as tensions between a given individual and their “preindividual reality”—the field of potential that they possess as individuals and that precedes their emergence (1992). This concept sounds as though it posits yet another “first term”, but it’s specific to each individual. As Alberto Toscano argues, it’s best understood as a “*real* condition of individuation” rather than an ontological proposition (2006: 155, emphasis original). Simondon pits this inner disequilibrium against another: the disequilibrium an individual establishes with their environment, or milieu. As an individual individuates, they must reciprocally adapt to their milieu. Individuation—what we might otherwise call subjectivation—unfolds in relation to these internal and external disequilibria, attempting to achieve and conserve contingent, “metastable”, states (1992). So, Simondon’s individuals are situated between processual dynamism and provisional stability, or internal and external relations. Individuation is always “mediate” (1992, 304).

Crucially, Simondon’s technical entities are subject to a much-less-complex dynamics of becoming. Technical entities express becoming by regulating their relation to their external—“associated”—milieu, but do not have the same capacity to regulate an *internal* milieu. So, they “individualise”—maintaining their internal coherence—but do not *individuate*, or achieve metastable states (Simondon, 2017: 49; Hui, 2016: 14-15). This conceptual language forecloses the very concept of a

digital subject, understood as a technical entity. This poses an obvious question: If individuation is incompatible with technical entities, why adopt either term?

Simondon's most influential contemporary promulgator, Stiegler, gets around this problem by adapting Edmund Husserl's phenomenological conception of memory and perception to argue that technology informs our individuations directly by acting as "retentional apparatuses", or memory aids, that shape subjectivity by externalising our internal processes (e.g. 2014, 50-1). However, Stiegler doesn't argue that technical entities themselves individuate (1998). I want to claim that the digital subject is a technical entity and that *it* individuates, individuating us in turn. Departing from Simondon, I want to claim that this technical entity individuates in circulating data. These propositions hinge on our being able to specify not only how a digital subject stabilises its relation to its associated milieu, but how it expresses a more complex form of becoming that we'd usually associate with self-regulating, organic or inorganic entities. My gambit is that the expanded concept of the digital subject that I'm proposing gives us better purchase on new modes of subjectivity that emerge after the internet. Hui's recent reworking of Simondon's philosophy provides us with the means to substantiate these propositions.

In his recent philosophical work on computation, Hui argues that the global-scale networking of computers combined with "the automation of data processing" constitutes a technical situation that he refers to as "the digital" (2016, 48-9). Hui asserts that the constituents of the digital milieu aren't code, algorithms, or computational processes themselves, but *data*. Data's circulating distribution forms the technical material by which the internet constitutes a "technical system", a Simondonian term for an emergent, higher-order distributed technologies (Hui, 2016,

170). What he calls “the digital” isn’t just an abstract conceptualisation of the internet: it’s also an environment. It creates a “digital milieu” that supports the emergence of a specific kind of technical entity: what he calls “digital objects” (2016). Hui’s digital objects are computational forms or processes that are “constantly in the process of reestablishing and renegotiating its relations with other objects, systems, and users within their associated milieux [*sic*]” (Hui, 2016, 57)—or, computational environments, such as specific platforms. Crucially, Hui further argues that digital objects are too complex, too “dynamic”, and too “energetic” to be conceptualised using the circumscribed term “individualisation” (Hui, 2016, 57). The complexity of their digital milieus and the recursive capacity to renegotiate their relations to their environments, to other digital objects, and, crucially, *to themselves* outstrips the limited form of becoming that Simondon accords to technical entities. They, too, mediate internal relations. Their mode of being might be technical, but Hui argues that they also possess the—stronger—capacity to individuate. This claim makes it possible to propose that the digital subject manifests a technical mode of subjectivity.

At first blush, what I’m calling the digital subject isn’t compatible with Hui’s concepts of the digital object and its digital milieu. In more recent work, he expands upon this capacity for self-regulation in ways that help us to understand how we might adapt his propositions to the digital subject. In an essay on executability in computation, Hui argues that self-referential algorithms of the kind that undergird distributed online services generate their own “dynamics resembling a self-regulating, self-learning process” by employing recursive logics (2017, 28). In language that resonate with Bratton’s, Hui also argues that the “role” accorded to the user of self-regulating computational processes is always recuperated back to the processes that establish

its position in relation to them in advance. Users of computational processes, in his view, are already “part of an algorithm” that is not only “part of a database” but is also, in part, constitutive of this algorithm’s “executability” (2017, 29). Put otherwise, computational processes design user positions as a condition of their capacity to do things. Their agency isn’t dependent upon what a user intends; rather, their executability accounts for the user in advance by incorporating their position into its design. Users are construed as triggers. Recalling Simondon, these technical entities don’t draw their sufficiency from their designers, but rather from the working relations they establish with their milieus and, recursively, with themselves.

Extrapolating from Hui’s work, the digital subject that occupies the user position is neither reducible to the human nor properly a hybrid of the human whom it predicates and the computational processes that constitute it. It’s a sufficient technical entity. Moreover, its algorithmic capacity to regulate both its relations to its digital milieu *and to itself*, as constituted by data captured by grammars of action and circulated by platforms, means that it expresses a level of complexity and a capacity to become that goes beyond Simondon’s technical entities. Online, the digital subject individuates, expressing an—again, limited and provisional—mode of subjectivity.

In making this claim, I don’t mean to suggest that the digital subject expresses as rich a subjectivity as a human. Nor do I mean to displace the human from these distributed online services. The concept of the digital subject is most usefully understood, I think, in response to the ambiguity that surrounds the subjective status of certain computational agents. Is a bot, a script, a machine learning programme a

subject? When interfaces obscure what's on the other side of our—researcher's—screens, do we take it at face value that anything that acts as a subject must be a subject, adopting an ad-hoc Turing test as a rule of thumb? What do we make of emergent agencies exercised by large-scale computational processes? The digital subject changes what's at stake with these questions. If an agent regulates relations to its digital milieu and to itself, it expresses a mode of subjectivity. Goriunova's concept is valuable, arguably, because it gives us the conceptual means to turn the ambiguity around what a subject is or isn't online into a research project. In asking how subjectivity is processed and what it does, it allows us to think it—in limited forms—beyond human predicates and elsewhere, behind the screen. It also introduces the means to think how the individuations of a digital subject might mediate our individuations, in turn. Returning to Ulman's work and analysing Blas's will help to show us how.

V. VISIBILITY, FACE, SUBJECT

Ulman's work is an example of “post-internet art”, a contemporary art movement that responds to the internet's pervasion of everyday life. Melissa Gronlund argues that one of the defining tropes of post-internet art is that it thematises the mediated presence of the artist in their works, asserting their “specificity” in the face of the internet's liquidation of all in to circulating data (2016, 157). Critics of post-internet art argue that its—mostly white—practitioners fail to recognise how visibility is even less equitably distributed amongst differently raced, sexed, or gendered bodies (Dean, 2016), or that it's often complicit in the expropriations that enable platforms (Quaintance, 2015). Whilst Ulman's work thematises how the injunction to be visible

falls unevenly on female-gendered subjects, it certainly seems to participate in platforms' exploitative traffic in subjectivity. But beyond its content and the critiques that might be levelled at it, its use of Ulman's—supposed—specificity also makes the grammars of action that enable online visibility apprehensible.

The algorithms that organise the displaying of content on social media platforms assign a greater weight to accounts that generate more interaction (Gillespie, 2017). In *Excellences and Perfections*, the different components that constitute the digital subject—platform, grammars of action, user position, digital milieu, data—cohere as data circulates, encouraging particular kinds of behaviour. Users are motivated to continue to interact both when they are interacted with and when platforms metricise their interactions (Bucher, 2012). Social media platforms like Instagram not only constitute the user in a pre-designed position, but shape users' actions to suit the platform and its grammars of action. The drive to be visible positions the enacted digital subject as the medium through which platforms' grammars individuate *us*. This "us" includes not only the human user who the digital subject nominally predicates, but also the other users who interact with a digital subject. To be visible, we must present ourselves to the platform. When we shape our actions to suit the platform, whether consciously—by trying to be visible—or unconsciously—by simply submitting our actions to their grammars—we fit ourselves to their parameters, presenting ourselves to be mediated.

This is where the concept of the digital subject takes on its necessity as an intermediary and as a means of conceptualising how it is that we are individuated by our interactions with distributed online services. The distributed online service inverts

the assumed relationship between the digital subject and the human user whom it predicates. It can't operate without us; but, it's not us that regulates its operations. That regulatory principle is defined by the platform to which it belongs. Through attempts to garner interaction by adopting normative tropes of gendered online modes of expression, Ulman's performance sets its digital subject to individuating in and through her posts, others' interactions, and the collective modes of participation made possible by Instagram's grammars of action. Its actions are scripted, as per the performance's design; but so much of what makes this performance dynamic emerges in and through the contingent, captured, circulating data that constitutes its digital subject's digital milieu. In Simondonian terms, we become material for the digital subject's individuations. That is, we become a part of *its* "digital milieu", components facilitating actions already set out in its user positions. This "we" includes the predicated user, but also other users whose data is captured and circulated to form a digital subject's broader digital milieu.

With this claim, the human subject doesn't disappear. Rather, the digital subject that operates in the user position established by a given service mediates the human user's individuations as *it* individuates. This is how the injunction to be visible subjects us to the digital subject's individuations. This is also why the digital subject remains the subject of circulation—this concept takes seriously that circulation can be constitutive of a form of subjectivity, rather than the means by which our data is captured. *Excellences and Perfections* exploits the ambiguities of the digital subject for performative ends. It might remain complicit with this platform, but it nevertheless makes these ambiguities available for us to critique.

Social media are not the only site at which digital subjects emerge. I want to turn to Zac Blas's work *Face Cages* now to outline how much more limited and much more reductive forms of the digital subject can be used to mediate our subjectivity in much more overtly political ways. One of the most typical tactics post-internet artists use to figure presence in their works is to show a face. The face is often dissimulated as it's presented in Ulman's and in other post-internet artists' work, whether quite literally—via image-processing techniques, like filters, or performative mainstays, like physical decoration—or, in a more abstract sense, when it's entered into circulation. When visibility's what's valued by distributed online services, faces serve as a means of making oneself visible to retain one's visibility online. Blas's project *Face Cages* provides us with a different take on how the digital subject processes our faces to mediate our subjectivity. Blas's work, it must be noted, has a self-avowed critical relationship to post-internet art (2014). Where *Excellences and Perfections* tests the dynamics of visibility to tease out its ambiguities, *Face Cages* makes facial recognition technologies violently visible to make them available for critique.

Face Cages is an installation and performance. Its key component is a series of metal masks, exhibited in photographs worn by a series of models, including Blas himself. Blas generated the design of each mask by using facial recognition technologies to map the faces of a set of performers. Facial recognition technologies use geometrical or statistical techniques to diagram faces. These techniques scan and map the relations between the features that make up a face—the distance between mouth and nose, for instance, or the curve of a brow—to produce a numerical set of ratios that can be translated in to data. In turn, this data can be used to identify the person to whom a face belongs. These diagrams are typically

processed as code or occasionally seen as images: to make their operations visible, Blas turned them in to masks and used them—worn by their corresponding faces—to produce performances, videos, and images. The aesthetics of these diagrams become a part of the digital imaginary's visual culture, often appearing in images as diagrammatic overlays superimposed over faces. This work demonstrates how the digital subject can be used to impose negative, diminutive individuations—by thematising what it means for our faces to be processed as limited and provisional digital subjects by facial recognition technology.

On a thematic level, *Face Cages* deals with the increasingly rapid spread of facial recognition technologies through society. What makes it interesting for our purposes is how Blas demonstrates the effects of these technologies on subjectivity. We've become accustomed to our biometric data being encoded in our passports or visas. This technology has also been adopted by technology companies: Facebook uses it to automatically tag photographs as they're uploaded, for instance, and it's becoming an increasingly common security measure that's used to gain access to smartphones and personal computers. Any similarity between these uses may be superficial, but the way they function is the same. Facial recognition technologies constitute a digital subject as a digital signature. They can facilitate the identification of people in images on social media. But they can also have an impact on the ability of the subjects they index to move freely or to act. They make visibility a liability by diagramming identity as a weapon to be imposed upon its putative owner.

Face Cage's masks literally materialise the diagrams generated by facial recognition technologies. But this materialisation also makes the dynamics of individuation at

play in facial recognition technologies available for us to theorise. The facial recognition diagram is a digital subject—if not the kind we’ve mostly encountered in this article. This digital subject is constituted by a grammar that may not require what we would typically think of as an action by a predicated user. At borders, our mobility is often premised on us submitting a digital photograph that can be used to extract our biometric data. On Facebook, our uploaded photographs constitute the data that’s used to train the platform’s facial recognition algorithms. In public, our movements expose our faces to capture by surveillance technologies. In each case, the action is a transactional submission: we must accompany a function—crossing a border, auto-tagging a photograph, simply being in public—with data. This transaction isn’t always intentional. Blas’s work demonstrates how a digital subject is constituted with this data. In Blas’s work, these diagrams are manifested as its eponymous *Cages*; that is, as objects that are imposed, that constrain, and that mark out limits. These diagrams nominally identify us by matching our data to our face. This “our” is misleading. As data, our faces are no longer our own; they’re individuated instead as a digital subject that most definitely indexes our identity, even if it can’t—doesn’t attempt to—encompass our subjectivity. As the objectified masks in Blas’s work suggest, this individuation changes our relationship to our faces. It renders our faces as objects.

After facial recognition, the face itself no longer needs to fulfil the role of identification. It now validates the identity that’s held in, and iterated as, data. When our faces become data and are set aside to be used against us, they are no longer ours. In the process, our identities are recuperated to data. Facial recognition technologies enter our faces into circulation and apply them back to us. Our

intentional or unintentional submission of our faces as data foreshadows an act of application that diminishes the set of possible individuations we can experience as subjects by subjecting us to a diminished set of possibilities. The “you” these individuations make possible either is or is not *you*, with the result that a recognition algorithm might be wrong; or your phone won’t unlock; or, at the extreme end, that you’ll be arrested or that you’ll be detained at the border and returned.

Blas’s *Face Cages* thematises the negative uses to which the digital subject can be put. It places the individuations that the digital subject mediates on a continuum: some of these are developing becomings; some diminish and partition the subject they predicate. Blas’s work demonstrates how facial recognition technologies reduce us to the identification of their face with a string of code. Ulman’s work demonstrates an inverse example of this relationship. By submitting herself to Instagram’s grammars of action, she sets a digital subject to individuating—and exploits its visibility and capacity to be identified with her to allow it to individuate apart from her. These processes sit on a continuum. They are not *inherently* political, *per se*. To think them as such would be to misunderstand the role that the digital subject, understood as a technical entity, plays in mediating our individuations. Rather, this is why the concept of the digital subject is necessary—it helps us to sort the cultural-political stakes of particular techniques of data capture; to understand their technical bases; and to be able to critique the cultural politics that particular grammars of action set in train.

VI. CONCLUSION

In one of his many infamous statements, Friedrich Kittler claimed that the development of the IF/THEN command in early twentieth-century computing transformed subjectivity: “[a] simple feedback loop — and information machines bypass humans, their so-called inventors. Computers themselves become subjects” (Kittler, 1999: 258). This statement has been superseded—if it was ever even true—by the digital subject and its digital milieu: circulating data. The aim of this article has been to introduce a conceptual language that we can use to conceptualise and to critique emergent modes of technical subjectivity made possible by the internet—which it followed Olga Goriunova in calling the digital subject. Using the media-theoretical concepts of the user, the platform, and grammars of action alongside Simondon and Hui’s philosophies of technology, it argued that the digital subject is a technical entity. Whilst admitting that the technical subjectivity expressed by the digital subject is limited, it argued that it provides us with the conceptual means to apprehend and to critique the cultural politics of subjectivity that have been instigated by the proliferation of data capture techniques.

The conceptual language that this article has developed in order to think these individuations might seem determined to exclude the *you—us*—from any conceptualisation of online subjectivity. This has not been my aim. Rather, my aim has been to try to introduce a conceptual language that we can use to specify, open up, and critique some of the individuations that subjectivity is subject to in the present. The political stakes of this approach should hopefully have been made clear by this article’s engagement with Ulman’s and Blas’s artistic projects. Each of these projects make the enactment of digital subjects visible to expose the cultural political stakes of visibility today. They also demonstrate how conceptualising the digital

subject can help us to engage with the uses to which “our” subjectivity can be put once its captured and aggregated in circulating data. Once the digital subject is seen to be what individuates online, its capacity to individuate us in turn becomes available for critique. More than this, its capacity to affect us beyond the confines of the internet become available for scrutiny.

This article has been braided through with the notion that the digital subject *is in* circulation—in the strong sense of this phrase. My concept of the digital subject has been predicated on the idea that it is constituted in and as circulating data. In lieu of articulating what circulation has meant directly, I’ve tried to use analyses of Ulman’s and Blas’s work to illustrate what’s at stake in the conceptual claim that circulation is constitutive of something like a digital subject. The cultural politics of data is the cultural politics of their capture, their aggregation, and their processing—in sum, their circulation. If the digital subject is the subject *of* circulation, its critical leverage is most effective at those points at which our data are extracted and put to other uses; or, at those gaps occupied by constructs like the digital subject, those points of transition between data and us. From here, individuations—limited, provisional, but massively distributed—proliferate.

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