RESEARCH ARTICLE

Choice or Disparation? Theorising the Social in Social Media Systems

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For millions of people around the world, social media systems now represent a central, material-semiotic mode of relation. At the level of algorithmic technique, their vision of the social is primarily achieved through the capture of, and interactive feedback upon choice and *decision*, made between information-objects as they are retrieved and circulated in communication. Choosing to befriend someone and not someone else, to linger over one product instead of another, or to select some search result over those above or below it, are all moments that differentiate a collective significance on these platforms. How might new materialist thinking intervene? The paper wonders whether current technical schemas for social media, which understand choice as an epistemic relation, might be fruitfully reconceived in terms of a prior ontological relation. Borrowing conceptual vocabulary from the philosopher Gilbert Simondon, the paper asks: how might we understand information as a differential effect of the distributed potential for becoming?

Introduction

Whether to mobilize around some issue or event, perform personal identity or put a friendly face on an institution, tens of millions of people around the world have enthusiastically adopted social media. And like any other writing technology before them, the platforms have generated a particular, material-semiotic relation to the world. Conceptualizing the mode of this relation, we might say that the software services offer a primarily *communicative-epistemic* lens on the world, in that they are premised on intersubjective expression as it can promote the pragmatic discovery and recovery of knowledge and information. Having evolved from a rich tradition of tools and techniques in the library and information sciences, social media are a technology purpose-built for both instant communication, and the intersubjective disambiguation of documents. We might add that, living amidst what Ronald Day (2007) calls 'post-documentary' forms, it is becoming more difficult to draw precise boundaries between communication and retrieval. Under the terms of social media, we are now one another's

librarians, curators and tastemakers; socializing around, antagonizing one another through, and otherwise forging relationships in a context of perpetually retrieving documentary fragments, like tweets, posts, and comments. Software and database developers treat these as manipulable objects or entities, but I will gather them generally under the (admittedly somewhat redundant) term of *information-signs*. With the rise of semantic web technologies and the so-called internet of things, in the near future everything on the planet may very well come to serve as a sortable information-sign in this regard, defined and circulated according to the terms of optimal search and retrieval.

At the underlying level of their algorithms, the platforms achieve this social functionality thanks to the constant capture of, and interactive feedback upon, prior consensus decisions between information-signs. The clicks, likes and other traces of activity we leave behind get compared in aggregate to those left before us, by loose groupings, acquaintances, and strangers who share our interests and attachments. Social software services derive useful patterns of relevance from recording these habits of choice, collectively steering everyone towards *whatever* information-sign they happen to be seeking out. Whether we follow Benkler (2006, 3) and call the result 'coordinate action', or Terranova (2004, 123) to understand ourselves among 'acentred multitudes', this is the basic technical capacity of social media: to formalize significance into the frame of a computably rationalized event, whose logic perpetually flocks us together around information-signs, gathering and dissipating groups of thematic concern.

But with the advent of this rationalizing procedure, differences productive of the social itself seem increasingly at risk, potentially flattened or made technically coeval with private choice and preferential attachment, in a prefiguration of the general conditions for encountering one another online. Pariser (2011) calls it the 'filter bubble': the choice to befriend someone and not someone else, to linger over one product page instead of another, or to select a search result over those above or below it, are all steering us into highly personalized worlds of significance. Elsewhere (Thomas, 2013) I've relied on Bernard Stiegler's (2009, 20) term 'orthothesis' to describe this new, default mediating condition; where increasingly social media technology, with its focus on personal choice, acts as a founding 'givenness' for experience, establishing the conditions of the recording of what happens.

The importance of choice and consensus decision at this basic level of technique has many historical connections, which I will gesture to only briefly before coming to the paper's main themes. First, Shannon & Weaver's (1949) mathematical theory of communication is an important core element, in establishing the theory of information as a basic principle for computing: information is understood to be the improbable selection of one among a set of possible messages, with entropy measuring the unpredictability of that selection. Second, deployed in institutions of all sizes, management information systems steer the modern enterprise through the capture of data, in support of decision as the basic paradigm for business analysis. Third, in terms of a software and interface design paradigm, John Searle's (1995) speech act theory and Jürgen Habermas' (1984) communicative action—with their focus on intersubjectively-achieved meaning and consensual social norms as a ground for decision—have given important philosophical justification for computer-supported cooperative work since the 1980s, especially through Terry Winograd's (1987) 'Language/Action Perspective'.

And finally, economically-styled rational choice theory has made its way into all kinds of social modeling (Surowiecki, 2004; Pentland, 2014), not least in the mathematical analysis of link reciprocity driving services like Google, in what some (Crogan & Kinsley, 2012) now justifiably theorize as the political economy of attention online. These and other elements hang together in what I am shorthanding all too quickly as a cybernetic *dispositif* (Galloway, 2014): based in social choice constantly feeding back on itself in a systemic way, to structure much of life in post-Fordist, highly computerized societies.[1] How might new materialist thinking

intervene into this central feature of social media? Acknowledging the profound insights of phenomenological sociology as it has helped to shape social media design, new materialism offers us a powerfully different philosophical vocabulary to describe these tools. Consistent with its commitments to distributed agency, the materiality of perception, and a bracketing of methodological anthropocentrism, new materialism can help us to understand the protocols and algorithms of social media in the altered terms of a non-, or a-humanistic, material-semiotic relationality.

The approach has substantial roots in the philosophy of Gilles Deleuze and Félix Guattari (1987). In an influential reading of the sign-relation, which ran against the grain of more traditional, idealized accounts of its nature, these eclectic anti-philosophers argued that signs always involve more than just the performance of shared meaning in a sociolinguistic context. Further, signs involve more than just a logical or formal relation, secured in the terms of semantics and correct reference—a relation to the sign still very much with us today, as it structures the databases that support the modern world.

For them, signs had a still-deeper dimension, best understood in the terms of an impersonal *event*, from which individuals receive an ordered orientation, and a sense of before and after. From their 'mixed' semiotic perspective, things in the world combine with language and events through signs according to a prior modality of power. From this peculiar but profound position, signs arrive with a kind of 'fourth-person' perspective: an effective function exterior to human beings that emerges from impersonal repetitions and redundancies in life, structured into what they called *collective assemblages of enunciation*. Although I will be relying primarily on the work of Gilbert Simondon, it's in these broad terms that the paper connects to new materialist thinking, so that we may better see how electronic media work as a 'ubiquitous force', as Connolly (2010, 189) puts it, that 'flows into the circuits of discipline, perception, self-awareness, and conduct.'

Following others like Rosi Braidotti (2013) in taking up this 'post-anthropocentric' position towards the technology, I argue that we need to venture beyond intersubjective, consensus-based choice as the dominant paradigm for understanding sociality through information systems. An important first step involves putting social media's epistemic understanding of identity and difference into relief against other theorizations of difference, especially those not conceptually beholden to decision or choice in quite the same way; it's here that I turn to the philosophy of Gilbert Simondon. Influential upon Deleuze, but also working alongside (and critical of) both the cybernetic tradition as it unfolded, and the phenomenological tradition of his mentor Maurice Merleau-Ponty, Simondon did not define identity in primarily epistemic terms. For him, difference was not based in an objective knowledge principle that resolved identity mechanistically, as a relation of probable choice between objective entities. Rather, difference was *ontogenetic* and non-identitary, manifesting in a process that he called *disparation*, describing a tensile difference between an individual's world and its own process of becoming. The paper uses disparation as a frame of reference to critique social media at the level of technique. Insofar as the tools increasingly come to form what Simondon called a principle of psychic and collective individuation, I follow him here in wanting to understand individuals—the user, and the various types of post-documentary information-signs that circulate online—from the perspective of social media's current processes of technical individuation.

Connected to his account of choice, for Simondon information was not just defined as exchanged messages between sender and receiver; it was also an internal resonance to being, individuating on the basis of its own *dephasing* (2005, 328). Simondon's thought carefully spanned dimensions of the psychic, the collective and the technical, and in light of his work the goal is to consider social media not as we normally might—by gesturing to

already-substantialized, knowledge-seeking social subjects who communicate in networks, as a ground for explaining the social—but rather by considering the technical theories that constitute these networks of relations between people and things in the first place as *themselves* in need of justification and critique.

Self-organizing knowledge systems

It was not so long ago that links and networks were mostly a matter for engineers, scientific researchers, and a cottage industry of web designers, with relation defined simply in terms of the associative principle of the hyperlink. Internetworked connections between servers made real the visions of people like Paul Otlet (1990), Vannevar Bush (1969) and Sir Tim Berners-Lee (1999), affording users the capacity to jump from one document to another at will, following chains of thought collaboratively inscribed as links between texts. With the rise of Web 2.0, linking became more rationalized as sharing, and data exchange began to pivot on the more individualized, attentional value of the link, soon dragging large portions of life into its orbit. As Helmond (2013, 5) writes, citing Langlois et. al (2009), here

> 'Platforms emerge as an interface between users, webmasters and search engines and 'arise as sites of articulations between a diverse range of processes and actors'. For the political economy of linking in the era of social media, platforms become important actors in the production and distribution of links while at the same time regulating access to these links for engines.'

Acknowledging these and other important themes concerning the political economy of communication and knowledge online, another important site for the establishment of the social through a technical relation is social media's philosophical roots in *epistemic individualization*. Especially relevant is the technology's debt to second-order cybernetics, and the field's conceptualization of self-organizing systems. Having lived under conditions of 'information overload' since Herbert Simon coined the term in 1970, most of us are all too familiar with what James Gleick (2011, 403) describes as that anxious gap between information and knowledge, where a 'barrage of data so often fails to tell us what we need to know', and where knowledge management systems theorize *effective action* as the key for minding that gap (Jashapara, 2011). From a systems perspective, however, it was the physicist-philosopher Heinz von Foerster who first described the information-knowledge gap as involving a recursive feedback dynamic, or an *observer-knowledge* relation. His accompanying notion of the eigenvalue now deeply structures the technical, algorithmic and mathematical approaches to social media, and to information retrieval as a discipline. Self-organizing systems are those that, despite striving for operational closure, are structured in such a way as to remain open and adaptable to change, as a function of maintaining/postponing that closure. Paradoxically, in these systems it is the continuous reaction to difference as a force of imbalance that maintains balance.

Referring to some contemporary interlocutors along the way, Clarke (2009, 56) sums up von Foerster's approach when he writes that second-order cybernetics

> 'sees a world so constructed that any single observer's observations may be rendered stable from moment to moment by the structural couplings and recursive conversations of *its* multiple observers. Just as all nervous systems and all organisms that possess them within themselves are virtual consortiums of multiple autopoietic systems, so are all observers bound into (what Varela calls) 'observer-communities' within which (what Luhmann calls) *social* autopoiesis [...] produces (what von Foerster calls) *eigenvalues*.'

These are defined as 'stable yet mobile and multiple recursive consensuses about shared environments' (Ibid). Eigenvalues are the objectified knowledge conditions under which meaning is organized into socially coherent identities, such that a probabilistically-structured 'either/ or' choice can occur between them, with the overall system designed to offer coordinating conditions for collective thinking. To say this more plainly in light of the affordances of social media: thanks to my choices being compared to the trails of choice left behind by others before me, I can more quickly discriminate the particular person, thing or document I am looking for—while also being exposed to related, 'recommended for you'-type information-signs that may also be of interest.

Most social media adopt some combination of three contemporary strategies for storing and reproducing eigenvalues, the 'recursive consensuses' that von Foerster theorized: knowledge graphs, social graphs and citation graphs. All of them take a constructivist approach to knowledge, in presuming a stable and self-referential user at their center. Knowledge graphs focus on exteriorizing discourse into networks of atomic propositions, capturing relations between things as disembedded, factual webs of correct reference. Social graphs act in a similar way, but treat *people* as the basic atoms, focusing on the more performative and illocutionary dimensions of identity and group affiliation. Finally, citation graphs start from document-objects and records as the entity to be individualized, analyzing relations between large text corpora statistically, to see how they link in to and out of one another, by way of footnote or hyperlink. As any pre-tenure colleague concerned with a journal's impact factor will tell you, citation analysis works on the principle that treating interlinked documents in this way somehow reveals (and thus influences) significant patterns of knowledge production. In the brief descriptions for all three forms of graph that follow, bear in mind significant overlap between them in practice.

Knowledge as a propositional-atomic feedback relation

Knowledge modeling focuses on the automatic recognition and evaluation of named entities; examples of knowledge modelling systems include the Freebase Project, Google's Knowledge Graph, and Stephen Wolfram's knowledge engine Wolfram Alpha. These services are often accessed invisibly, in support of the natural language capabilities now built into smartphones and tablets. When you speak into Apple's Siri in search of a factually discrete answer, like 'What's the capital of Saskatchewan?', or (who knew?), 'What planes are above me right now?' your phone is likely to connect to a knowledge graph database called a *triplestore* to retrieve the answer. True to their name, the databases structure information by way of interlinked facts called triples, which follow the assertoric structure of 'subject-predicate-object', as in: Regina is_the_capital_of Saskatchewan. The Freebase Project's open source engine boasts a collection of 2.5 billion discrete facts organized as triples, for example, representing a distributed effort to make all sorts of different knowledge domains, from religion to skiing, amenable to factual inference by machines. By interlinking assertions to form domains of knowledge, they offer both users and software designers the capacity to compose and automate fact-based decision routines.

Like relational databases before them, triplestores are an eigenvalue technique that promotes regularities around meaning and action, by establishing a consensually-held, closed world of facts against which questions can be compared and winnowed down to a precise answer. A key difference is that by relying on networked structures based in the simple assertion instead of more heavily-structured relational data tables, triplestore databases can interact more flexibly 'flush' with everyday discourse. On top of being responsive to the retrieval of encyclopedia-style knowledge, triples are used to represent knowledge relative to you and your local environment. If while inputting his number into my phone I indicate that Bryan

is my brother, then later say 'Have dinner tomorrow night with my brother at 8:00', the utterance is parsed into a set of assertions that bring both private and public information-signs into a graphed relation, producing useful knowledge: the date, a given slot of time, the correct person I'm meeting by name (via the familial relation I've previously indicated) and probably even the restaurant's location will all fall into place automatically as a set of known facts. It's at this point that we begin to see drift between knowledge graphs and social graphs, where the Facebook social network service is a clear example.

Knowledge as a performative feedback relation

In the latest incarnation of its development platform called Open Graph, Facebook gives anyone hoping to develop software that connects to social media the ability to solicit and circulate what it calls 'Stories' from users. The difference between knowledge graphs and social graphs can be slippery, but is roughly captured in a distinction first made by the philosopher J.L. Austin, between *constative* and *performative* utterances, in his theory of speech acts. Though he eventually came to see dimensions of both in every utterance, Austin (1975, 5) originally posited that a statement was constative if it imparted factual 'information', and performative if it was issued in the course of the 'doing of an action'. If knowledge graphs generally store constative triples, then social graphs generally store performative ones. As a formal procedure, the Facebook Stories architecture represents the state-of-the-art of this process of embedding performatives into electronic discourse.

   Like knowledge graphs, social graphs involve precise, semantic relations between entities; but instead of producing records that store factually accurate statements about the world, Stories retain and circulate performances between 'friends', under conditions of social felicity that involve a more emotional, declarative or promissory dimension. In algorithmic terms, Stories contribute to Facebook's constantly churning signals and weightings, helping to drive conditions for what will be visible and salient for users in different parts of the platform. In this manner social ties become the ongoing heuristic for relevance *and* the technical condition under which triples are formed.

   Following their developer documentation, three elements go into telling stories on any app that relies on Facebook's social graph: an actor, an action and an object (Facebook.com, 2014). The 'subject-predicates-object' structure of the assertion is framed performatively, where the actor is the person who wants to express themselves through the triple format, an event that Facebook calls 'publishing'. The action is the activity the actor is performing, such as reading a book, running a distance, or enjoying a film, representing how they want to predicate their experience through the Story. The object is whatever information-sign the actor is interacting with: an evening concert, another person, or a lawn mower they've just purchased. Here's a direct example:

> if you're building an app to track rock climbing you may want to make an action 'climb' where the object is a mountain. The story can include a picture and the geographic location of the mountain. By adding additional data you can create a compelling story to share with friends and make your app a part of how people express themselves to others (Ibid).

In other words, through this process users are encouraged to make their interests, tastes and lifestyle choices public to friends. On the platform side Facebook parses, in a staggering number of ways, the resulting giant graph of people and information-signs, aggregating demographic niches that it sells to advertisers. As Bucher (2013, 487) writes, it is through technical

features like Stories that 'Facebook seeks to induce and simulate the emotional and intimate connections seen as a defining feature of friendship'.

Knowledge as a citational feedback relation

Although first applied to scientific research papers by the information scientist Eugene Garfield (1972), perhaps the most famous application of citation graphs was Google's PageRank algorithm (Page et. al, 1998). Its success was based in large part on certain statistical processes that demonstrate von Foerster's eigenvalues. The German prefix *eigen-* means own, inherent or proper, and PageRank's innovation was to treat the frequency of hyperlinking across the web as a mathematical matrix of eigenvalues. The approach was iterative and recursive; a way for the web to 'appropriate itself', or stage a self-organizing interaction between its structure and function, giving users far better search results than had previously been seen.

Every page captured in Google's massive cache of the web theoretically began with an equal and finite quantity of 'popularity', assigned as a mathematical baseline. In an initial step of ranking, a chain of links was followed randomly among the cached web pages, with a determination of which page had received a greater share of backlink endorsement made once complete; the process is known as a Markov chain in mathematics, or more simply a 'random walk'. It mimics the way a user chooses their way across the web to find what they're looking for, or how they think through an idea associatively. Pages landed on more than once in the first random walk, intuiting a higher number of backlinks, took over a greater portion of the finite distribution of popularity, at the expense of pages that did not have as many backlinks. At the end of this first pass each page was assigned a score, represented in the original algorithm as a whole number from 0–100 (Ibid, 4). Then another random walk among links occurred, as if the imaginary user was clicking their way through the web a certain 'distance' before getting bored or frustrated, starting again in some other random place. But in subsequent iterations beyond the first scoring, the results of each random walk had the additional attribute of *prior page-popularity*, which recursively boosted any page randomly landed on via more popular backlinks. In other words, the quantity of backlinks a page received remained important, but now an endorsement from a page popular in the previous pass would count for *more* than an endorsement from one with smaller prior popularity.

Feeding prior popularity scores into consecutive random walks during the ranking process, and re-running this entire process over time (every six to eight weeks in the early going at Google, but constantly now thanks to its globally distributed cache of the web) has the effect of restructuring the modern web as though hyperlinked documents and records were 'voting' for one another, essentially conceiving of them, and/or their authors, as rational agents making choices. Subsequent versions of Google's algorithm have added many refinements to the process: daily activity over all of Google's properties, geographical location, language used, personal search history, and the search histories of friends on social network services are just a few of the thousands of signals that now structure personalized results through the mechanism of probabilistic choice (Google.com, 2013).

As has hopefully been demonstrated by a rehearsal of their underlying conceptual frameworks, each system outlined relies on a self-organizing model predicated on rational-individual choice, with prior selection outputs feeding back into current needs, interactively resolved through a platform's eigenvalue relations. Especially with the profusion of mobile devices, a major goal of social media has been to offer up this rational, self-organizing relation *whenever* something happens to disturb a user's 'operational autonomy', providing information to address the disparities of one's environment across a wide variety of situations. But at

the level of technique, these moments of knowledge disparity and resolution have all being defined by a Kantian conception of what a knowledge-relation *is*, and how it is to be resolved: in the terms of probabilistic choice between already-constituted, mutually-exclusive entities that fit a pre-established *code*. The user is a discrete subject, and things, people and events are conceived as objective information-signs disembedded from their manifestation in the world.

Given the freedom and convenience afforded by social media—to access so much knowledge about the world around us, and manage the organizational complexity of everyday life—we clearly attain significant autonomy through its technical relations. But in a more speculative and new materialist register, we can ask whether users still lack autonomy with respect to the prior *ontological terms* of that knowledge-relation; where in its establishment, each user's shifting differentials of becoming get projected into the systems in a particular way, coming to matter mostly in the terms of abstract utilitarian choice. In other words, by fitting into pre-existing coded structures that interlace private choice with the essential diagram of information theory—e.g. the probabilistic selection of one entity from an overall set, conceived as exchanged signals securing semantic consensus—users forfeit a deeper, prior relation *of* the knowledge relation.

As suggested in the introduction, elaborating this issue means shifting discussion from epistemology to ontology, to ask: are there other ways to comprehend the 'productive disparity' of the individual, coupled to the social in an autopoietic relation that current services conceive as a relation of choice among informational resources? A starting response is that each approach tacitly relies on, but ultimately leaves out prior conditions of *heteronomous* relation among individuals, conceived as singularities in life. Toscano (2006, 3) starts to get at these conditions in his description of *anomalous individuation*, which appeals to 'the unequal or differential ground of production that lies beneath the actual, constituted, individuals which provide the objects of the philosophies of representation'. These we might call the affective, perceptual and psychic polarities, or bifurcations of becoming that constitute individuals, which form a deeper, yet obscured ground for choice. They are elements that social media platforms have tended to envelop through constant redefinition into the epistemic terms of retrieval, as a paradigm for eigenvalues.

In a corporate video describing the evolution of search, for example, Google Fellow Ben Gomes states that, 'Our goal is actually to make improvements to search that just answer the user's informational needs, get them to their answer faster and faster, so that there's almost a seamless connection between their thoughts and informational needs and the search results they find' (Googleblog 2011). Contemporary academic discourse in the information sciences sees retrieval as deeply penetrating the psyche in similar ways. Cole (2011, 1227) writes for example that, 'Information need is at its deepest level primarily a human adaptive mechanism—at the level of human perception, at the level of society and the world in which the individual operates, and at the level of survival as a species'. It was due to similar, positivistic accounts of information as a phenomenon that Simondon sometimes criticized cybernetic models of the individual, rejecting their representationalist assumptions for misconstruing what he saw information's real role to be: in individuation (Toscano, 2005, 147).

Knowledge as an ontological dephasing relation

It is worth noting again that Simondon's ontology does not draw hard boundaries between the vital individuation of life, individual psyches, social collectivities, and evolving technologies; rather, he conceives of them all as intercalated, each participating in the formation of individuated interiors and exteriors of the other's wider systems. Individuals are always-already only one part in the processes of larger entities (Simondon, 1992, 300). Characteristic of new materialist thinking, in justifying his definition of individuals Simondon inverts the

relationship typically established between being and becoming. Where the various schemes for retrieval outlined above define the sign-relation as a cognitive or epistemic *lack*, whose need is fulfilled by selecting one's way to the correct object, Simondon conceives of the sign-relation as an ontological *excess*: a being 'more-than-individual' (Combes, 2013, 35), upon whose surplus individuation takes place. His concept of *disparation* is fundamental here, in designating

> a tension, an incompatibility between two elements of a situation, which only a new individuation can resolve by giving birth to a new level of reality. Vision, for instance, is described by Simondon as the resolution of a disparation between the image per-ceived by the left eye and the image perceived by the right eye. These two disparate two-dimensional images call forth a three-dimensional dimension as the only way to unify them' (Ibid, 111).

For Simondon, metaphysically substantialist accounts of the individual (upon which social media's technicity is premised) mistakenly define becoming in the terms of being: the unity of an individual is sustained, and its singularity (or *haecceity*) defined, by some prior principle of difference. On this understanding, the issue for him is that 'Anything that can serve as the basis for a relation is already of the same mode of being as the individual, whether it be an atom, an external and indivisible particle, *prima material* or form' (Simondon, 2009, 4). In the case of social media, choice as a principle of psychic and collective individuation comes to fit hand-in-glove with a techno-logical principle of the excluded middle—where a proposi-tion is either true, or its negation is true, as a basic mediating feature of computing—thereby producing a *prior basis for relation*, and a *mode of being*. In giving substance to being through any one of the three strategies outlined, rational choice becomes the general social prin-ciple of co-becoming and *adaptability* for both people and the media systems, impressing the conceptual form of 'rational being' onto users and things conceived as *unformed matter*, establishing them as discrete subject and object.

How is Simondon's approach distinctive? From a certain perspective it can be hard to see much difference between his account of individuation, and one given for a reflexive subject that is integrated into self-organizing knowledge structures. Following the ocular analogy of disparation, are we not in some sense now one another's 'opposing eye' on social media systems, achieving collective disparation through the algorithmic, pairwise superimposition of our differing private choices? Guided by someone like Anthony Giddens' (1984) theory of individualization, for example, social media systems would here simply be the latest assem-blage to predicate social order upon a 'gap' at the heart of a self-reflexive subject. We negotiate subject-object relations via a disequilibriating encounter with our structuring environment, and these encounters resolve for the individual through the acquisition and use of knowl-edge, as we receive its 'structurated', consensual norms for behavior. For Simondon however, there is a crucial difference between individuation and individualization: in his account of the former, neither the structure nor the operating individual *ever has unity* as a concrete, self-identical being.

Where self-organizing systems theory typically understands incompatibility from the per-spective of an agentic organism's demands on the environment, Simondon sees incompat-ibility with an environment in a more Spinozist way, as the default condition of *collective* individuation—of life, psyches, sociality and technology together, in a global situation. In other words, the environment has *its own* individuating conditions, which relate to the condi-tions of the organism through what Simondon calls the preindividual, modulating a 'double-becoming'. Agent and container are effectively a constant flux, never achieving some state of

self-similarity, and it's in this light that he asks: how does the organism differ from itself, how does the environment differ from itself, and under what circumstances do they nonetheless *come to relate* in a disjunctive (non-)relation? As Hansen (2009, 134) writes, 'if the global situation is a global perspective, it is not a perspective *of the organism* but a perspective *on the entire process of individuation* of which the organism is only one part—a perspective, in short, that situates the organism within the broader context of the preindividual'.

In other words, preindividual being simply *is* this milieu: the given conditions under which a tension between potentials belonging to previously separated orders of magnitude can be resolved via their communication (Combes, 2013, 4). Bearing Simondon's 'flipped' understanding of being and becoming in mind, in their current incarnation social media stage preindividual being as a decisionistic milieu, individuating people as choice-makers with preferential attachments, and platforms as real-time decision-capture machines that space us out into probabilistic fields of 'having chosen something'. It's in this fuller sense that the systems *can* be charitably read as structuring a disparation, but individuating in a fashion more accurately described as individualization: they resolve magnitudes algorithmically between people and signs by relying on actual choices made in a behavioristic sense, establishing the preindividuated potential to choose through their adoption.

Simondon's way of thinking suggests that at its core, individuating relation is only secondarily epistemic; it is primarily *ontogenetic*, though the two remain importantly intertwined through what he goes on to specify as 'allagmatic' operations. Massumi (2012, 43) writes that ontogenesis involves a 'self-inventive passing to a new level of existence', meaning that being and thinking are the *same* as they occur in an individual's milieu. But we alienate ourselves in allowing a representationalist approach towards thinking to stand in for, and then 'cast back' upon being. The limitations of our current operational understanding of sociality online stem from a similarly *a posteriori*, epistemic characterization of relation itself. Relation ought not take place according to a principle that appeals to some higher rank of being—in this case an extraction of mental connection as utilitarian rational choice, as we forge endless connections between disparate entities under the philosophical auspices of intentional categorization. Rather, *being itself becomes by linking together differentially*, spacing itself out in an internal milieu, through a difference particular to living and not adequately known through the taxonomic sorting of concepts. As Combes (2013, 18) describes in a helpful refrain: 'knowledge exists in the same mode as the beings that it links together, considered from the point of view of that which constitutes their reality'.

Acknowledging that we are moving here into a more speculative discussion that may not fit with the extant capacities of information systems, the user-as-individual in this case might no longer be understood as a discrete agent making choices with autonomous intentionality.[2] Rather, they would be taken more impersonally as an 'it': an individuating process-organism involved in the 'local resolution of disparation, as the invention of a compatibility between heterogeneous domains and demands' (Ibid, 149). Perpetually 'becoming-individual', the relation would not be based in some preconceived notion of 'bringing like together with like' through choice as an abstract mechanism; it would rather emerge between-*itself* in the vital and semiotic resolution of a milieu, with choice conceived as a problem resolved by way of the user's inventive *analogical* capacity, to make comparisons in order to see novel differences. Individuation would still be a knowledge relation, but one defined by an individual entirely in light of its particular individuating dynamic—or 'preindividual share', as Simondon understands it—and thus not admitting of any one, generalized epistemic principle. Conceived in light of his critique of the cybernetic approach to information, Simondon's appeal to a deeper, 'first information' is instructive here.

Iliadis (2013, 7) relies on Luciano Floridi's (2010, 74) work to discern three ways of talking about information: *as* reality, 'e.g. patterns, fingerprints, tree rings;' *for* reality, 'e.g. commands, algorithms, recipes;' and *about* reality, 'e.g. train tables, maps, entries in an encyclopedia'. Iliadis points out that, 'Where the cyberneticists thought the interoperability and indeterminacy of information 'about' and 'for' reality, Simondon thought these concepts in terms of information 'as' reality'. A focus on the former two has led to the kinds of algorithmic procedures that motivate current social media platforms. In theorizing the latter, Simondon believed that the relational difference of choice might be inverted: to becomes less a principle of signification as information 'about' reality —where a dominating subject presides over a neutral object, engaged in its interactive control—and more a compositional principle of signification as *invention*, with individuation once again thought of as an excess. As Massumi (2012, 32) describes, for Simondon information 'is not susceptible to any stable formalization because it is continually giving rise to new operational solidarities that did not exist before, and therefore exceed all prior formalization'. Choice thus needs to be better understood in terms of the *advent* of being—information's 'as'—instead of its simple relation as something already organized between sender and receiver (Simondon, 2005, 310). As Toscano (2006, 143) writes, Simondon is attempting to 'appropriate the concept of information for a consideration of ontogenesis in terms that would precede and condition the formation and circumscription of these individuated entities and quantities that go by the names *sender*, *receiver* and *code*'. To follow his line of thinking, how might this alternative account bear on the functionality of social media? In the space that remains, I need to look elsewhere than the services themselves, to try and indicate a disparational energy of semiotic difference in generic discourse that currently fails to register in the referential techniques already outlined.

As we saw above, knowledge and social graphs structure the sign according to *predication*, pivoting around the copula of the 'is' in formal-semantic terms. I have argued that this gives a metaphysical account of identity and difference that, based in the social-autopoietic terms of second-order cybernetics, secures particular relations between subjects and objects. In offering an alternative approach that extrapolates from Simondon, I want to hold on to this designative, referential dimension between subjects and object as it supports our relationship to signs. But I will try to indicate a different way to appreciate reason and ratio as a ground for thinking, which does not rely on formal predication. The goal is to mark a more latent, immanent dimension of the sign that people like Heidegger (1991) and Deleuze (1990) have in the past thematized as the sign's *manifestation*. To repeat myself, differently: insofar as social media tools are too premised on an intersubjective economy of choice, they obscure other semiotic 'hints' of difference that may be worthy of inscription into new practices, especially as these bolster a Simondonian account of the preindividual. Exemplifying their generic presence in discourse, I find (some will say, hallucinate) these hints in some bits of discourse taken from two pieces of editorial writing online.

In the **Table 1** are two sets of four statements, published after US President Barack Obama's 2013 proposed gun control legislation was defeated. Taken from politically polarized sites, they have been very tendentiously excerpted for two reasons. First, to preserve their possible circulation as information-signs: to pull them out as fragments of reference that bear some resemblance to current, post-documentary styles of algorithmic processing, which rely on the 'is' copula. Second, and more importantly, they are excerpted to portray Barack Obama's significance as an ongoing *problem of collective individuation*. An underlying motive is to suggest that in this example, there is signification based on difference, operating in a register *below* what has been described throughout as the retrieval relation. Deploying Simondon's vocabulary, there is a contrastive metastability in these excerpts, between incompatible potentials

President Barack Obama, on gun control (Breitbart.com 4/17/13)

claimed that opponents of expanded federal background checks had "no coherent arguments" for their position	<>	resorted to false claims and statistics about current laws, including the repeatedly debunked argument that 40% of gun sales are private.
used the Newtown disaster to make an argument about the urgent need for new laws	<>	exploited the Newtown disaster to make an argument about the urgent need for new laws
noted that 90% of Americans, and a majority of National Rifle Association members, supported expanded background checks	<>	ignored the fact that constitutional rights like the Second Amendment exist precisely to protect minorities against majoritarian passions
Showed a reserved, measured response to the Boston Marathon bombings	<>	attacked his opponents viciously, expressing and evoking such visceral emotions–especially at a time of mourning.

President Barack Obama, on gun control (Slate.com 4/22/13)

Thwarted by partisanship	<>	lacked the skills to manage the moment
Could have done more	<>	required a different skill set
Admitted he usually thinks he can do his staff's job better than they can	<>	had his best shot handing this issue over to Biden
Master of the art of politics	<>	hired because he is the anti-politician

Table 1: These are direct excerpts from two web articles. Contrastive relations immanent to sequential, or nearby sentences in the articles themselves are being pulled out of context, for the purposes of highlighting how they manifest a differential; some kind of (admittedly abstract) *analogical* ratio of 'more/less'. For the purposes of a more ontogenetically-inflected style of information processing, these differentials might be operationalized—by the author or others, over time—through some kind of technical 'hinting' strategy that marks the ratios in a collective practice—a kind of ontogenetic "hyper*sense*" that builds on the strategies of lexia-based hyper*text*.

of becoming, which contributes to, but would otherwise remain obscured by a relation of choice between them as separate 'things to be read as information'. Thinking ontologically about what it means to be social around signs involves recuperating and marking such contrastive energies as *themselves* constructively individuating operations that might be made amenable to eigenvalue techniques. In other words, for any information-sign there is more going on than factual denotation; following Simondon, information-signs percolate with a *manifestation of becoming*, a deictic of individuation that takes place in writing through the operation of analogy. Borrowing again from Toscano (2006, 140), 'Rather than providing the emblem of closure or totalization, relationality is 'the non-identity of being with regard to itself.''.

Using the different statistical or taxonomic strategies outlined earlier, a formal-semantic approach would differentiate the sign 'President Barack Obama on gun control' in any number of ways: Barack Obama could be an entity different from other presidents, or other words like 'baracan' or 'obey', or other prominent African Americans, or perhaps temporally into a first-term and second-term president, for example. To think relation in Simondon's terms, as both an epistemic-conceptual relation *and* a becoming-manifestation relation, the goal instead (or somehow prior to these epistemic operations) would be to preserve 'Obama on

gun control' as persisting in the action of an individuating sign *encountering other signs in a problematic field*, involving immanent ratios between series of signifiers and signifieds that were being *brought into relation* by humans and non-humans dynamically animating the sign. I have tried to capture this in the example above, by drawing attention to how 'Obama on gun control' is repeatedly compared in the writing to itself as a sign, through a sequence of analogical operations that indicate a choice, but one that is auto-constitutive in its signification-through-difference, and not based in a selection between predigested objects. For Simondon, as Combes (2013, 16) writes, 'A substance appears when a term absorbs into itself the relation that gave rise to it, thus obscuring it'. It's in this sense that I am trying to depict signification more immanently, where the wider goal is not to zero in on Obama's 'correct' reference in, or as a closed constellation of facts. Rather, difference is mobilized to involve the conditions of a collective becoming-individual, with other psyches, institutions, collectivities and signs participating in an overall milieu, staged by signs that thematize the world as a set of outstanding questions or problems. Read through a Simondonian lens, the authors face a surfeit of potential meanings, and are thinking through an analogical operation to resolve signs into compossible relations. What I am suggesting is that this relation of compossibility could serve (or serve differently) as a site for information processing than the current context of social media.

Drawing out the features of an individual psyche coping with heterogeneous potentialities in order to resolve an excess of meaning, the **Table 1** tries to show where we might find contrastive, relational differences latent to writing as collective expression. Simondon's alternative account of 'first information' is suggestive here. Whenever someone chains together signs in disparation, they tacitly rely on different 'more-or-less' operations of affective, perceptual and conceptual ratios that connect up disparate fields, modulating signs into disjunctive series of signifiers and signifieds. I have tried to denote this with the symbols in the middle of the table, where the inventive tendency towards one relation over another is denoted by the slightly larger, greater-than symbol—in effect offering an alternative, more immanent way to think about choice.

The upshot of this rather wooly exposition is to wonder: would it be possible to organize a technical practice, and a set of computational operations around these ratios, to push current thinking about the potentials and pitfalls of social media in a new direction? From the perspective of a post-documentary form, here the basic force for differentiating information-signs into visibility would no longer be 'personal choice between retrieved objects.' It would rather be something like an entity's immanent, continual 'bifurcation into problematics.' Signs should matter because their status is *in question* globally, technologically captured and motivated by the energy of *how* people are questioning it, rather than simply *that* they are being communicative in their questioning, as we might see in an otherwise innovative platform like Twitter. In other words, could social media strive for less crowd-trending, and more collective-agonistic, designed from the perspective of questioning rather than from the perspective of answering queries? The idea is that as a matter of underlying technique, social media might capture, store and organize signs as a manifestation of internal asymmetries and polarities in thinking, rather than to impose a polarizing structure through which signs come to matter mostly as instances or tokens of thought.

The statements of the two writers quoted above inflect and refract certain perceptual and affective intensities in their relation to Obama's interventions into gun control, putting these intensities into relation through disjunctive series. Instead of encountering the two articles discretely, with one perhaps ranked over top of the other on the basis of what you've read in the past, or based on who's recommended one over another to you, the statements themselves might sit more flush with the enchaining together of series of what you will read,

respond to, feel and do next, through their more immanent contrastive relations. In other words, the example is meant to suggest a set of alternative traces we might leave behind (and in a sense already are leaving behind, but in an obscured way) which might still be productively computed into collective eigenvalues. In terms of one's capacities towards these signs, rather than picking the next document to read, you might conceivably add your own contrastive bifurcation to a transversal space of statements around 'Obama on gun control' as a collective process-entity, for example.

Future in-formation

At a more basic level, I have tried to indicate that despite their increasing conflation, signi-fication through retrieval is not the same thing as signification through ontogenesis. In the push to make discourse more technically amenable to the optimizing disparation of existing knowledge, social and citation graph services, we may be unwittingly obscuring important, metaphysical dimensions of the semiotic. Individuals are more than abstract epistemic agents; they carry resonant ontogenetic differences *within themselves*, as they become through their bifurcations to *be* one way, and not another. These are asemantic, disjunctive signals that set up ratios of excess and lack in signification, upon which individuals carry out compatibilities of communication in the form of expressive, individuating sign-events. Through social media systems, these signals are being put to work to serialize thinking in a particular way.

In light of this horizon, we need to be asking questions about the conditions under which technique will support signification online, and what more preferable conditions for the pres-ervation and amplification of society's transindividuation might look like. From the altered point of view I have sketched out here, the hope is to better see how certain long-standing accounts of meaning and knowledge reproduce an intersubjective orientation to the sign at the expense of obscuring a prior, 'enunciative' relation. The result is what we might call an 'operational subject' that is too heavily premised as a *communicative-epistemic agent*, leading to an end-user who finds themselves constantly re-enacting retrieval as the general paradigm for social significance online.

As this retrieval relation bleeds into more intimate registers of life in network societies, it risks defining our relationship to signs as such in a way that forecloses upon other conceptual possibilities. The counterintuitive gambit is that to reimagine social media, we benefit from suspending a *sociological* approach to computing; one where, as Bruno Latour (2005, 91) remarks, the social is somehow made of some homogeneous stuff. Instead, we need to engage with social media's procedures by taking a new materialist, 'mixed' semiotic approach to our relations with things, institutions, technologies and power. Thinking in this vein contends that signs always involve more than the performance of shared meaning in a sociolinguistic context. They also involve more than a formalized relation of valid reference, a feature of signs that has nevertheless become crucial for the coordination of life in an information age. Signs have a still-deeper dimension, best understood in terms of an impersonal event, from which individuals receive an ordered orientation for living, and an experiential sense of before and after.

When unique Twitter hashtags emerge to orient people around a street conflict or natural disaster, for example, or when Google aggregates real-time search queries to predict national flu activity, have we not moved beyond the simple denotation and retrieval of information? By involving new materialist thinking, and especially Simondon's philosophical theories in my analysis, I have tried to gesture in a different direction for thinking about social media, premised on the idea that signs involve not just signification, but manifestation: a combina-tion of language, singular bodies and events that perpetually shifts according to some prior, conditioning modality of power. If the social web is to serve as a future platform for both

information retrieval *and* public expression, then it is crucial that we rethink the latter on its own more distinctive sociotechnical terms.

Competing Interests

The author declares that they have no competing interests.

Notes

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