Individuation, Sexuation, Technicity

Stephen D. Seely [iD]
Newcastle University

Abstract
Within the context of questions raised by gender and sexuality studies about the relationship between sex and technics, I develop a theory of sexuation derived from Gilbert Simondon's philosophy of individuation. First, I provide an overview of Simondon's philosophy of individuation, from the physical to the collective. In the second section, I turn to the question of sexuality, outlining an ontogenetic account in which sexuation is conceived as a process of both individuation and relation that is fundamental to certain living beings. Then, drawing on Simondon's theorization of technics in its mediating function between humans and the world, I resituate understandings of the relation between sex and technics. While each section – Individuation, Sexuation, Technicity – argues for the significance of these concepts to feminist and queer theory, overall the essay uses Simondon's work as a new paradigm for gender and sexuality studies and calls for the invention of a sexuate culture.

Keywords
gender studies, ontology, sexuality, Simondon, technology

Over the past decade, a growing body of scholarship has worked to extend the influence of the philosophy of Gilbert Simondon (1924–89) in Anglophone contexts beyond science and technology studies and Deleuze studies to social (Bardin, 2015; Combes, 2011; Guchet, 2012; Scott, 2014; Venn, 2010) and feminist (Grosz, 2012; Harvey et al., 2008; Sharp, 2011) theory. As Elizabeth Grosz (2012: 52–3) argues, Simondon's work – especially given the long-awaited translations of his major texts into English – provides an occasion to 'reorient some of the central questions of feminist thought' by offering 'a new way of understanding a world that is not ultimately controlled or ordered through a central apparatus or system, that has no inherent or necessary hierarchies, that does not require animation or coordination by culture

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Corresponding author: Stephen D. Seely. Email: stephen.seely@ncl.ac.uk
Extra material: http://theoryculturesociety.org/

but instead enables and makes culture itself possible'. This essay contributes to such a project by exploring the significance of Simondon's philosophy for rethinking sexuality and gender, using his work as the basis for a new theory of *sexuation* as an operation of individuation and relation. Such a theory, I suggest, will enable not only a reconceptualization of identity and sociality, but a new *operational* paradigm for gender and sexuality studies that is more capable of grasping the becomings of sex at all levels – from the vital to the psychic, collective, and technical – as well as the relations between them.

Although the basics of Simondon's philosophy of individuation are by now somewhat well known, I begin in the first section with an explication that closely follows Simondon's texts in order to outline the terms that characterize operations of ontogenesis. For Simondon, understanding the ontological status of any object – whether physical, vital, psychic, social, or technological – necessitates a study of the *processes* that have generated it, i.e. its *ontogenesis*. Applying this approach to the study of sex, the second section of the essay develops an ontogenesis of sexuality that attempts to rethink what sexuality *is* by thinking its process of genesis. For Simondon, the study of ontogenesis permits a new type of *operational* analogy that frees the object of research from structural or merely heuristic forms of analogy and allows passage between different 'regimes' or 'orders' of individuation. This 'transductive' method of analogy, as Simondon describes it, 'consists of transporting an operation of thought, learned and tested on a particularly known structure ... to another, particularly unknown, structure and the object of research' (2013: 532).[1]

If the transductive method permits Simondon to pass from the physical level to the vital, and from the vital to the psychic and social, through operational analogies, then although he does not undertake a study of sexuation as a mode of individuation, I would argue that analogically transporting the operations of vital, psychic, and collective individuation onto sex enables such an experiment of thought. Indeed, for Simondon, while the transductive method might be '*applied* to ontogenesis', thereby allowing us to understand processes of individuation, 'it is *also ontogenesis itself*' (2013: 33, emphasis in original). The ontogenesis of sexuality presented here, then, is not intended as a conclusive proof based in scientific fact, but is what Simondon calls a 'journey of the discovering mind' (2013: 34) – a journey that might itself open onto new individuations of sex and life, both ontologically and epistemologically.

After theorizing sexuation as an operation of individuation, I then turn in the final section to reconsider the relationship between sex and technics, placing sexuality squarely in the passage between Simondon's rethinking of ontology (in *L'individuation à la lumière des notions de forme et d'information*) and his rethinking of technics (in *Du mode d'existence des objets techniques*). While, once again, Simondon never directly

considered the relationship between sexuality and technics – discussing sexuality only in *L'individuation*, while speaking only of generic 'man' (*l'homme*) in *Objets techniques* – I argue that his work nevertheless provides the elements for a profound reconceptualization of it. In *L'individuation*, Simondon provides what amounts to the ontological and epistemological foundations for a new philosophy of sexual difference and sexuate becoming, premised on a harsh critique of the neutrality of the 'objective' world, and suggests that an individual's vital and psychic sexuality must be given 'signification' within the transindividual domain. However, in *Objets techniques*, where he traces the source of this neutral, objective world to a hypertrophy of the technical mode of thought, and where he argues for the role of technics in facilitating new transindividual significations, the question of sexuality does not arise at all. Thinking 'transductively', then, I will suggest that his proposals for a new 'technical culture' can ultimately be achieved only in and through the associated invention of a *sexuate culture*. Grasping the ontogenetic and transductive relations between life, sex, and technics, I conclude, would lead to a queer-feminist politics oriented not toward a 'post-humanist' overcoming or transubstantiation of sex through technology, but toward the cultural amplification of sexuality.

Individuation

The starting point of Simondon's project is the critique that western thought has granted an 'ontological privilege' to the individual – either as a merger of 'matter' and 'form' (in hylomorphism) or as eternal substance (in atomism) – and has only attempted to consider the principle of individuation *ex post facto* on the basis of a constituted individual. Against this view, Simondon elaborates a new ontology of *individuation* (or 'ontogenesis') in which the central terms of western metaphysics (atoms, form, matter) are replaced by *form, information* and *potential*: rather than the individual, Simondon centralizes operations of information that structure fields of energetic potential starting from an encounter with a structural seed or 'form' (see Simondon, 2013: 537–8). Drawing on the pre-Socratic notion of the *apeiron*, as well as on modern physics, the basis of Simondon's ontology is a *pre-individual* system that Simondon often refers to as 'nature', 'the real' or even '*réalité première*'.[2] This pre-individual reality consists of unstructured potentials in tense metastable equilibrium, without distinct phases but not self-identical or homogeneous (analogous to a supersaturated solution). When these tensions push the system to the point of incompatibility, it resolves itself by 'splitting' (*se dédoubler*) and 'dephasing' (*se déphaser*) (2013: 26). One of the phases emerging in this resolution is 'the individual', which consists of both a topological dimension, or 'structure', and a temporal dimension, the 'function' or 'operation'. The other phase is the remaining

unstructured potential of the pre-individual, which now becomes the individual's 'constitutive energetic system' or 'associated milieu' (2013: 62). Crystallization, to take Simondon's paradigmatic case, brings about a stabilized resolution in a tense pre-individual field (the supersaturated solution) when the insertion of a structural seed (the solvent molecule) pushes the system out of its metastable equilibrium and generates both an individual (the crystal) and a milieu (the 'mother water'). For Simondon, the essence of individuation is a process of 'transduction' which simultaneously establishes two distinct domains and places them in 'communication' with one another. The individual is therefore 'relative' in two senses: 1) it exists only as a relation between two disparate domains and 2) it exists only in relation to its associated milieu (2013: 26). For Simondon, this is why *relation* is the only form of reality and why the 'units' of his ontology are not individual beings but *individuations of pre-individual being*. An individual is therefore not 'a substance nor a precarious being aspiring to substantiality' but rather 'a singular point in an open infinity of relations' (2013: 334).

It is precisely the individual's relation to its milieu, or its associated energetic conditions, that marks the difference between physical and vital regimes of individuation. Simply put: a living individual is one that carries its milieu with it, with which it remains in a constant relation of exchange, while the physical individual does not.[3] This means that the living individual continues to exist at metastable equilibrium and thus 'conserves within itself a permanent activity of individuation' (2013: 27). While a crystal is individuated all at once and must be placed back into a supersaturated solution in order to generate additional layers, a living individual carries within and around itself a certain 'load' (*charge*) of pre-individual potential, giving it the capacity to dephase and generate further processes of individuation. The living individual is thus, as Simondon puts it, 'not only the *result* of individuation, like the crystal or molecule, but a *theatre of individuation*' (2013: 27, emphasis added). A living being, then, is an organized operation-structure system ontologically indissociable from its energetic conditions. Retaining a permanent relation to the field of individuation – the pre-individual – which enables its perpetual becoming, the living individual is simultaneously 'a system of individuation, an individuating system *and* a system being individuated' (2013: 28). There is therefore no *substantial* distinction between 'living matter' and 'non-living matter', or between the physical and vital domains; rather, they are 'two speeds of the evolution of the real', which, as pre-individual, is 'as *pre-physical* as *pre-vital*' (2013: 313, emphasis added). Life, for Simondon, inserts itself within certain physicochemical systems as a '*deceleration*' (*ralentissement*) when the tensions are too great to be resolved by physical structures and functions alone, thereby prolonging the process of individuation. The slower the process of individuation, the more of its unstructured, pre-individual potential

the individual is able to integrate into its structure-function system, giving it the capacity to resolve increasingly complex problems. Ironically, then, the more 'complex' the individual is, the *less* complete and exhaustive is its individuation: a living being is therefore like 'a crystal in a nascent state, amplifying without stabilising'; and, hence, an animal is like 'an inchoate plant' (2013: 152).

For Simondon, life emerges to resolve the problematic created by the pre-vital processes of 'integration' (i.e. the reception and storage of energy or information) and 'differentiation' (i.e. the distribution of the information stored) that physical systems cannot resolve. In its most basic form, then, life is the transductive operation that establishes a certain metastable equilibrium, or 'internal resonance', between these processes that Simondon calls 'regulative affectivity' (2013: 165). It is this operation that creates an 'affective identity' within the individual by establishing normative relations between its interior and exterior and introduces a dimension of temporality within it (2013: 158). At the vital level, regulated by affective normativity, the relation between the living individual and its milieu is already polarized by direction (*sens*) corresponding to the individual's range of possible action. In this relation, the individual regularly receives information from the milieu in the form of 'thresholds of intensity' (2013: 235) that, when they overwhelm the capacities of basic regulative affectivity to establish an equilibrium, lead to a dephasing of the individual and its milieu. In a process of transduction analogous to stereopsis, the individual must find – or, rather, 'invent' – a resolution to this state of incompatibility, or 'disparation', in the form of *affection* or *perception*, which produces a new structuration within the individual that places the individual and its milieu back into a state of resonance. This invention is the emergence of the properly *psychic* domain, which, like the three-dimensional image formed from binocular disparity, is an order of compatibility over and above the vital functions. As the physical domain contains a residue of unstructured pre-individual being from which new vital processes of individuation emerge, psychic individuation draws its resources from the metastability of life. Unlike physical and vital individuation, however, psychic individuation does not give rise to a new individual because it is the vital individual itself that is the source of the pre-psychic problematic. Rather than a new *individual*, then, psychic individuation gives rise to new structures and operations *within* the existing individual that establish communication between different domains. Strictly speaking, psychic individuation is thus an *individualization*, which is the 'individuation of an individuated being, resulting from an individuation, creating a new structuration at the heart of the individual' (2013: 261). These new structures which individualize the living individual create a splitting (*dédoublement*), analogous to the original dephasing of the pre-individual into the individual-milieu couple, that consists of both organic specializations

('the body') and psychic schematizations ('the mind'), or what Simondon calls 'successive psycho-somatic couples', that *correspond* to one another because they are co-emergent but are not identical to one another. It is through its psychosomatic individualization, then, that the living individual 'tends toward singularity' (2013: 258).

   In what is probably the most complex and original part of his ontology, Simondon argues that the emergence of the psychic domain is concomitant with the emergence of the collective. Because the associated milieu of the living individual traverses the interior and exterior of the individual, the unstructured pre-individual field from which the psyche emerges is not 'divided up' and contained within the limits of the bounded organism (2013: 166). In other words, because the new problematic is more-than-individual, the resolution must be more-than-individual. Affections and perceptions can therefore only *partially* resolve the disparations arising in the individual-milieu relation because these establish a relation of information between the individual and the milieu that is limited to the individual itself. These individualized resolutions can only take on sense (*sens*) through *emotion* or *action*, which institute a superior dimension of mutual coherence or resonance between what would otherwise be isolated and incompatible affective and perceptual universes (2013: 210). This superior dimension is that of the *collective*, which Simondon defines not as a substance or form, but as the *operation* of 'communication that encompasses and resolves individual disparations in the form of a presence which is the synergy of actions, the coincidence of futures and pasts in the internal resonance of the collective' (2013: 218). Like the active centre of crystallization is the operation that splits and dephases a pre-individual field into a reticulated structure and an energetic milieu of potentials that are not-yet-structured, the psyche is the operational centre (or 'present') of a process of individuation that dephases the pre-individual carried by the living individual into a *body-as-structured-virtualities* (the past, or 'memory') and a *body-as-unstructured-virtualities* (the future, or 'imagination') (2013: 278–83). Likewise, the collective is the operational centre of a *trans*-individual process of individuation doubling into a reticulated *social-as-structured* (the past) and an unreticulated *social-as-virtualities* (the future) (2013: 285–7). In fact, these are the same process of psychosocial individuation grasped from its two poles: the psyche and the collective (see Guchet, 2012).

   For Simondon, the body of the individual is therefore *coextensive* with the social because the unstructured potential of the vital individual exceeds the membranes of the organism and receives its structuration in the collective: the pre-individual carried by a living being is therefore the unstructured potential (or future) of *both* the individual *and* the collective, which are structured in the same process as a '*syncrystallisation*' (2013: 290, emphasis added). Through action or emotion, the

individual establishes a transindividual relation of information, or 'sig-nification', that places its unstructured potential in communication with that of others (i.e. the social-as-virtualities). The resulting metastable state gives rise to new structurations within both the individual *and* the collective. Within the individual, Simondon calls these new structurations the 'personality', which integrates the individual's psychosomatic indivi-dualizations into its ongoing process of individuation through the inven-tion of a superior domain of compatibility that enables the individual to take on sense to itself and others. It is therefore only through a *collective* process of structuration – drawing on shared unstructured potentiality carried within the bodies of living beings – that the individual can create the structures necessary to resolve the psychic problematic that vital structures and functions alone cannot resolve. In other words, psychic structures are inherently collective and vice versa. Individuation is there-fore *unique*, psychosomatic individualization is *continuous* and 'as perma-nent as current perceptions and behaviours', and the psychosocial personality is *discontinuous*, or 'quantic', constructed during successive processes of collective individuation (2013: 262). A human individual thus consists of pre-individual, individual, and transindividual phases corresponding to its individuation, individualization, and personality. In each of these phases, the individual can be grasped either as vital, psychosomatic, or psychosocial *structures*, or as transductive *operations* that keep the disparate domains in communication: as the operation of transduction between the physical and vital domains is called *life*, it is *personalization* that keeps the vital and psychosocial domains in commu-nication. The total reality of this system is what Simondon calls 'the subject', which is a polyphasic, transductive *more-than-unity*, consisting of a superposition of vital, psychic, and collective structures and opera-tions *as well as* of the unstructured potential of the associated milieu and is 'infinitely richer' than any notion of 'identity' (2013: 308).[4]

As the individual becomes increasingly reticulated as more of its pre-individual potential is structured, so does the social. Like any operation of individuation, psychosocial individuation requires a certain degree of both prior structuration and unstructured potential. In the case of crys-tallization, without the structural seed there is not enough tension in the supersaturated solution to push the metastable equilibrium beyond the threshold at which new structuration is possible; however, the crystal seed alone does not possess enough potential to generate its own restruc-turation without the potentials carried by the supersaturated solution. Psychosocial reality is therefore a mediation between reticulated struc-tures and unstructured potential. These reticulated structures are the relics of past operations of psychosocial individuation, in most of which any given individual was not involved (e.g. those structures, or significations, within the social group that preceded the individual or those of another social group) (see Bardin, 2015: 89–109). A highly

reticulated society thus becomes a network of 'familiar frameworks': instead of establishing *new significations* through psychosocial operations of action and emotion, the individual's behaviour is normative, repetitive, and habitual vis-à-vis existing structures (2013: 259–60). Indeed, because there is no *substantive* distinction between the vital and the psychosocial domains in Simondon's ontology, there can be no substantive distinction between behaviour in the absence of new psychosocial individuations and that of the basic regulative affectivity of life itself: when psycho-social reality becomes a form of bio-sociality, the psyche is no longer operational, making the psychosomatic individual a merely vital organism and the social a form of biological collectivity like a species, population, or herd (Barthélémy, 2009: 29). On the other hand, in certain cases, an excess of unstructured potential in a group can create such a state of tension that it generates mass processes of new psychic and collective structuration. Simondon refers to such states as 'pre-revolutionary', which are so supersaturated with potential that the smallest structural seed – or even 'chance' – is enough to push the system over the threshold into revolution (2013: 556).

Not every relation between individuals is thus sufficient to constitute psychosocial individuation. Simondon refers to interaction at the level of already-reticulated structures as '*inter-individual*' rapports, which are external interactions between already-individuated terms, and which do not lead to the invention of new psychic and collective structures (2013: 294). Here, there is no real *signification*, but only the circulation of signals, the iteration of past norms, and stereotypes. The veritable *transindividual relation*, however, always *bypasses* existing individual and collective reticulations by establishing relations of communication (signification) at the level of *unstructured potential*. By relating pre-individual to pre-individual, such a relation takes place not '*between*' (*entre*) structured individuals, but '*through*' (*à travers*) them – hence: *trans*-individual – engendering *new* norms and structures (2013: 298). This, for Simondon, is the emergence of the properly *ethical* domain: an ethical act is one that enables the greatest degree of pre-individual potential to be deposited into the collective, thereby facilitating the becoming of both the individual and the collective. Such an act is the invention of forms of reticulation that facilitate the greatest communication between the pre-individual and the transindividual, that is, the discovery of significations that give a sense and direction to individual and collective becoming:

> Ethics expresses the *sens* of perpetual individuation, the stability of a becoming which is that of pre-individual being individuating itself and tending toward a continuity that reconstructs, in the form of organised communication, a reality as vast as the pre-individual system. Through the individual, amplificatory transfer issuing from Nature, societies become a World. (2013: 325)

Sexuation

According to Simondon, only what splits and dephases into psychosomatic couples is individualized, while the *unity* of the individual being is maintained by what in the individual is *not* individualized (i.e. what remains of its associated pre-individual). If the individual's psychosomatic individualization is its 'real historicity,' while the personality is what reintegrates these individualizations through psychosocial structures, its *ontogenetic unity* is maintained by its ongoing originary individuation (2013: 261). The first emergence of the individual-milieu couple from a dephasing of pre-individual being is thus what Simondon calls the individual's 'absolute origin,' or the 'fundamental mode of becoming' on the basis of which it will continue to split and dephase in the continuous individualizations of life (2013: 27). Remarkably, every time Simondon calls on an example of an operation that takes place at the level of *individuation* and not merely individualization or personality, he uses 'sexuality' (see 2013: 258, 260, 261, 263, 299–300). Certainly, it would not be accurate to say that Simondon has a 'theory of sexuation': indeed, he never even uses the French verbal noun *la sexuation*, instead using the noun *la sexualité* and the adjective *sexué*. I would contend that this is because Simondon refers to sexuality primarily as a *structure* generated in operations taking place at the level of individuation so as to distinguish it from the structures generated in individualization and personalization. And yet, Simondon is clear that any object of research, given that it is necessarily the product of a process of ontogenesis, can also be studied from an *operational* perspective (2013: 529–36). As such, in drawing out an operational theory of sexuality from Simondon's work, I will use the word 'sexuation' to emphasize precisely the active dimension of the operation (analogous to Simondon's choice of 'individuation' over 'individuality'). In what follows, 'sexuation' therefore names the *specific operation of individuation that generates sexuate individuals,* while 'sexuality' refers to the *structural modalities* thereby generated. Sexuality, here, must therefore be distinguished from its common connotations as a form of identity or as an inter-individual activity taking place between already-constituted individuals. Irreducible to either the hetero/homo or male/female binaries, 'sexuality' encompasses all of the structural dimensions of being sexuate (*sexué*), while 'sexuation' is the ontogenetic process through which these structures are generated.

In *L'individuation,* Simondon describes sexuality as one of the 'innate psychosomatic dynamisms and structures that constitute a mediation between the natural (pre-individual phase) and the individuated' (2013: 299). While he points out that sexuality could not exist if there was not a 'psychosomatic distinction between individuals', this does not imply that sexuation is in any way secondary: indeed, he calls sexuality 'a *modality of the first individuation*' rather than a 'property' or 'content' of the

individualized being (2013: 300). This means that sexuality is more than part of the individual's psychosomatic individualization: it is part of the fundamental relation between the individual and its associated milieu or pre-individual potentiality. As such, the operation of sexuation is therefore neither 'biological' nor 'psychosocial', but both and more: it is *onto-genetic,* i.e. it is *as constitutive of the sexuate individual as the very fact that it exists and lives.*

If, as Simondon puts it, thinking ontogenesis means 'carrying out a genesis of thought at the same time as the genesis of the object' (2013: 34), then developing an ontogenetic theory of sexuality entails attempting to follow the genesis of sex from the beginning. Distinct from reproduction, which is the generation of a *numerically* new individual, sex, at its most basic, is the transfer of genetic information from one individual to another, leading to the 'formation of a *genetically* new individual' (Margulis and Sagan, 1986: 2). According to biologist Lynn Margulis, genes are memory retention systems that encode and store information about vital processes, including 'lessons' learned in the past. At its earliest stages, she says, 'life repeatedly created problems for itself' and the exchange of information through genes between bacteria – i.e. the earliest forms of sex – enabled survival and variation through recombination, which generated new structures and operations in response to these problems (Margulis and Sagan, 1997: 59). The 'story of sex' therefore 'starts with an account of the earliest life on Earth' (Margulis and Sagan, 1986: 2). From such a perspective, the transfer of genetic information among bacteria produced new individuations, i.e. new function-structure systems, that enabled the resolution of problems emerging in their milieu. While growth and reproduction are the *essential* vital operations that enable continued individuation on the basis of the individual's original structural-functional foundations, sex emerged as a *vitally non-essential operation* that enables new individuations on the basis of a *transformation* of the structural-functional foundation through a *transductive relation with a different individual.* Like life itself, sex is thus a potentiality within certain physicochemical systems that enables the resolution of problems that cannot be resolved physically, or even vitally, within the individual itself – an excess beyond vital operations and structures enabling life to differ from itself through communication with another centre of individuation. Sexuation, then, is the *operation of limitation* that creates the *difference* necessary for such an informatic relation with another individual to take place. Among living beings whose individuality is more provisional, sexuality is more provisional, lasting only as long as there is limited individuation. Here, because the relational limitation is more or less coterminous with the topological boundaries of the individual itself, there are effectively as many 'sexes' as there are possible points of informatic transfer.[5] In multicellular organisms, in which individuation is much more prolonged, and in which the first topological structure

of the individual is 'mediated' by a series of intermediary interiorities and exteriorities (2013: 225), then 'the adherence of sexuality to the individuated being creates an *inherent limit* to individuation within the individual' (2013: 300). While the evolution of sex is still a matter of considerable debate among biologists, from an ontogenetic point of view it is clear that something of sex and sexuation have been transductively propagated throughout the history of life as an *operation of informatic relation-in-difference* (sex) and as the *operational limitation to individuation* that enables such a relation to take place (sexuation).

Sexuality is therefore not like the psyche, as an individualization on top of an individuation. Rather, as a modality of the *first* individuation, like life itself, sexuality has to do with the individual's *constitutive* relation to its associated pre-individual potentiality. Organisms that reproduce 'asexually' do not require fusion with another individual to generate the sufficient unstructured potentiality from which a new individuation can emerge. Indeed, Simondon calls such beings, such as amoebae and infusoria, '*pre-individual life*', because they are both living systems *and* pre-individual systems that contain enough metastable potentiality for the continuous generation of new individuations without psychosomatic individualization (2013: 168–9). In beings that reproduce sexually, however, the pre-individual exceeds the bounded individual, which is therefore incapable of being the absolute origin of a new process of *individuation* (as opposed to its 'own' ongoing psychosomatic individualization). In such cases, the pre-individual is split between (at least) two modalities of individuation that must come together to achieve the potential sufficient to generate new vital individuations. For Simondon, then, sexuality actually enables a greater integration of pre-individual potentiality into the process of individuation because the limitation to individuation that is imposed by sexuation prevents the individual from complete individuation, which would ultimately exhaust its pre-individual potentiality:

> Individuation is therefore *bimodal as individuation*; and precisely it is not an individuation that is completely achieved as individuation since it remains *concretely bimodal*; there is a halt in the pathway of individuation which permits the conservation *in this bimodality* of the inherence of a load of *apeiron*; this translation of the unlimited in the limited saves the being from aseity and correlatively deprives it of complete individuation. (2013: 299, emphasis added)

As a 'bimodal' individuation, the 'unit' of sexuation is not the individual-milieu, but the *couple*-milieu: 'Sexuality is a suspended individuation, stopped in the asymmetrical determination of the … unified duality of the couple' (2013: 299). This means that a given sexuate individual can be at most *half* of the structured reality, and its associated energetic milieu

can contain at most *half* of the potentiality, that its pre-individual reality generates. In other words, sexuation is always and only an individuation – not only in relation to an associated milieu, but also – in relation to a *sexuate other*. Simondon's reference to 'bimodality' here cannot be understood in terms of distinct totalities ('the two sexes'), or as the phallocentric binary (one sex and its negation), because this is to privilege constituted individuals; rather, it describes a *twofoldness* in the very process of individuation itself in which each serves as a *limit* to the becoming of the other. If life is a mode of individuation that establishes an ongoing relation between the individual and its pre-individual potentiality, sexuation is a mode of individuation that provides life with an ontogenetic limitation in the form of the sexuate other.

In Simondon's theory of ontogenesis, an individual *is* its process of genesis starting from its pre-individual reality. As such, the structure of an individual is 'in every case tied to the schema of its genesis' (2013: 189). With respect to sexuality, it is therefore the *mode of genesis* that makes an individual sexuate (or not) rather than its role, or even potential role*,* in vital functions like reproduction. Simondon could not be clearer on this point: 'Sexuality is not a specific function placed in the individual by the species as a foreign principle: the individual *is* sexuate, it is not merely affected by a sexual index' (2013: 299). Humans, in other words, are sexuate because we are generated by a sexuate pre-individual reality, and not because we might happen to carry sperm or ova. For Simondon, the gametes are the structure-function systems that result from what he calls provisional or 'elementary' individuations that are generated from the *sexuate* pre-individual potentiality of sexuate living individuals (2013: 182).[6] The meeting of these two centres of individuation is a transductive communication that combines the unstructured potentiality carried by each of them, creating a metastable pre-individual singularity, the zygote, from which a new individuation can begin. From here, the first individuation will be both vital – i.e. consist of an ongoing individual-milieu coupling – *and* sexuate – i.e. be limited with respect to a bimodal individuation. As a pre-individual field, the fertilized ovum is already traversed by differentiations and intensities in a tense metastable state, containing more potentiality than can or will be actualized. From this equipotentiality, individuation is the constant exchange, or internal resonance, established between the developing embryo and its milieu. Properly speaking, then, embryonic development is already a process of *individualization*, i.e. the continuous psychosomatic splitting of the already individuated vital-sexuate being. As long as the individual is living, it will continue this process of sexuate individualization, continuing to draw on the load of unstructured potentials it carries with it in its pre-individual field. Throughout its life, the individual is an increasing concretization of its zygotic potentials in response to informatic exchanges with its milieu. This process has both a spatial (or structural)

and a temporal (or functional) dimension, generating increasingly individualized corporeal structures and associated psychic schemas that are reflective of the individual's specific history, its affections and perceptions. These psychosomatic individualizations are then attached to the individual's vital-sexuate individuation through personalization, which 'integrates, in a unique situation, sexuality and the individual history of events' (2013: 258).[7]

As part of the first individuation, sexuation will provide a limitation to *every subsequent psychosomatic splitting* or individualization. And yet, sexuality far exceeds the constituted individual: because, as part of the first individuation, it 'belongs' to both the pre-individual and the individuated being, sexuality is precisely what makes the individual *more-than-itself* by linking it to the sexuate other(s) *and* to its 'own' pre-individual potentiality. Sexuality, to quote Simondon:

> is some pre-individual still attached to the individual, specified and dichotomised so as to be conveyed in an implicit, psycho-somatic manner by the individual. The *dichotomy of the pre-individual* allows greater integration of the pre-individual load in the individual; sexuality is more immanent to the individual than to the pre-individual, which truly remains an *apeiron*; sexuality [read: *sexuation*] moulds the individuated being body and soul and creates an asymmetry between individuated beings as individuals. Sexuality lies at an equal distance between the *apeiron* of pre-individual nature and limited, determined individuality; it realizes the inherence of a relation to the unlimited within a limited, individuated individuality. (2013: 299, emphasis added)

As more complex living beings prolong earlier forms of vital individuation, they prolong earlier forms of sexuation, enabling more of the pre-individual to be integrated into new and ever more complex structures. Because sexuation links the individual to the pre-individual, the individual is therefore potentially, or 'virtually', sexuate in infinite ways beyond what has been individualized in its psychosomatic structures. As individuals draw on this reserve of sexuate potential in responding to more complex problems, sexuate structures and operations will become increasingly complex. And yet, because the development of an individual is tied to its mode of genesis, sexuality constitutes an *insuperable limit* in vital, and therefore psychosocial, individuation. As part of the first individuation, the continued development of sexuation, like life, can take place *only* by being prolonged in psychosocial individuation and stabilized in the collective. This is why Simondon says that sexuality is 'not the collective, but an inspiration and incitement toward the collective' because, as with vital operations, significations must be invented

that give sense and direction to an individual's sexuation (2013: 299). At this point, then, sexuality is no longer a *resolution* to a vital problematic at the individual level but is part of the *problematic* to be resolved at a *transindividual* level.

Technicity

In the section of *Du mode d'existence des objets techniques* on the 'Genesis of Technicity', Simondon begins with an ontogenetic account of the relations between humans and the world. This process begins with a dephasing of what Simondon calls the 'primitive magical unity', which is the originary 'mode of being-in-the-world', or 'the simplest and most fundamental structurations of the milieu of a living being' (2017: 178). The magical universe is not a state of total absorption by the milieu but a basic reticulation consisting of privileged nodes, or 'key points', of reciprocal exchange between the individual and the milieu prior to the separation of the subjective from the objective or the figure from the background. In the form of tools and symbols, the living being creates modes of mediation between itself and the milieu (including other living beings) that 'exteriorize' its functions and structures, eventually leading to the consolidation of a techno-symbolic milieu, or 'envelope', just over the threshold of the vital relation to the milieu (Simondon, 2008: 186; see Bardin, 2015).[8] Through these tools and symbols, 'mediation itself, rather than being a simple structuration of the universe, takes on a certain density' and becomes either objectivized or subjectivized (2017: 181). Here, the 'primitive magical unity' dephases and splits, with its two tendencies – reticulation and totalization – becoming 'technicity' and 'religion' respectively. For Simondon, then, technicity is a *mode of mediation* between the individual and the world that reticulates the milieu into a network of objects, while religion is the subjective mode of mediation that works to reintegrate the individual-milieu into a totality. Technical evolution thus consists of the concretization of the potential inherent to technicity as the objective mode of mediation in the form of what Simondon calls technical elements, individuals, and ensembles.

Once the individual no longer *alternates* between organic life and technical life, but begins to engage its vital milieu *only* through the mediation of the techno-symbolic envelope, a 'mode of *compatibility* between the two lives' is required, which Simondon calls 'culture' (2013: 333, emphasis in original). While it is here that 'the human' can be said to emerge, for Simondon this is no simple evolutionary anthropology. As the originary metastable phase of the relation between the individual and the milieu, 'magic' subsists as unstructured potentiality that is the source of subsequent psychosocial individuation – an 'origin that never cease[s] to produce effects' (Bardin, 2015: 171) – which means that 'hominization' is an *ongoing process* of individual and collective individuation. This

operation begins as the vital individual is impinged upon by its milieu – which consists of both biophysical (i.e. geological, vegetal, animal) features and the relics of past techno-symbolic exteriorizations – in response to which a signification in the form of perception or affection places the milieu and the individual in communicative relation. But because the psychic problematic is more-than-individual, this resolution can only be stabilized in the collective by way of the transindividual invention of new psychic and collective structurations. This resolution thereby creates a mutual compatibility between the vital and the techno-symbolic worlds – i.e. 'culture' – because the milieu within which the problematic arises is partially vital and partially techno-symbolic. Thus, as Andrea Bardin (2015: 170) puts it, Simondon's study of the dephasing of magic 'allows a better explication of the shift from nature to culture both as a primitive stage *and* as the original phase recurring in each new ontogenesis of the collective'. From this point of view, 'culture' is therefore a *resolution* to the problem of disparation between the vital and techno-symbolic systems and is thus *occasioned* but not *determined* by either of them. And because cultural signification is generated through active operations of psychic and collective individuation that originate in the very relation between the individual and the milieu, it '*prolongs* the reality that it represents' rather than being a system of arbitrary signs (Simondon, 2013: 332). As such, the ontogenesis of the cultural system is *isomorphic* with that of the individual and collective and, to that extent, is undergoing a process of becoming as ongoing as that of individual and collective individuation.[9]

As the cultural system becomes increasingly distinct from the 'natural' world, however, it is not only the vital milieu that technics and religion work to mediate, but the 'human world' itself (2017: 223–4). Thus, once a circular causality has been established between the vital and the techno-symbolic milieus by way of culture, and once the 'human world' itself becomes the object of techno-symbolic operations, then one can say that *human* individuation is not only *mediated* but *modulated* by these operations insofar as it is *through* them that further psychosocial individuation takes place. Now if, as Simondon (2013: 300) suggests, sexuality 'is a modality of the *first* individuation', then it necessarily constitutes part of the originary, 'magical' relation between the sexuate individual and its milieu. This means that sexuation, as described above, is *hominized* through techno-symbolic mediation and this *human sexuality* then becomes the object of further techno-symbolic modulation. And like human life itself, the resulting disparation between vital and techno-symbolic sexuality can only be resolved through transindividual signification in the cultural system. This, I think, is where critical sexuality studies is particularly helpful in extending the ontogenetic account of sexuality. For although Simondon's social ontology lacks an explicit account of power operations, the unstructured pre-individual potential carried by

living beings – i.e. the individual and the social bodies as virtualities – can be understood as a field of 'power' in Michel Foucault's sense that is *reticulated* or *modulated* through various technics of discipline, regulation, and control, making every node in an operation of modulation, every point of individual and collective reticulation, one of the 'transfer points' that Foucault understands as a power relation (Foucault, 1990: 94). In the epoch of what Foucault calls 'biopower', then, the materiality of bodies and populations is reticulated through the various apparatuses that constitute the '*dispositif* of sexuality' – namely, 'discourses, institutions, architectural arrangements, regulatory decisions, laws, administrative measures, scientific statements, and philosophical, moral, and philanthropic propositions' (Foucault, 1994: 299) – which institute a mutual compatibility between the vital and techno-symbolic systems through the *cultural* sign of 'natural sex'. In his pre-structuralist work on the genesis of the cultural system, Jacques Lacan describes precisely this phase shift from 'nature' to 'culture' and from the individual to the collective – in reference to a very particular operation called 'Oedipalisation' – as '*orthopaedic*', which, taking the body of the child as matter for techno-symbolic moulding, reticulates the potentialities of its sexuation according to the demands of phallocentric heterosexuality through the successive psychosomatic structurations of the so-called family complexes (2006: 78; see also Lacan, 2001: 23–84).[10] As the *dispositifs* of disciplinary societies give way to technics of *permanent modulation* in what Gilles Deleuze (1992) famously described as the 'societies of control', then, a more plastic notion of 'gender' displaces the rigid mould of 'natural sex'.[11]

Within gender and sexuality studies, 'sex(uality)' and 'gender' are generally considered only insofar as they are *products* of these techno-symbolic and cultural operations. Following the ontogenetic approach that I am developing through Simondon, however, sexuation must be understood as *ontogenetically prior* to its techno-symbolic and cultural modulations and therefore as irreducible to them. Thus, instead of theorizing operations on the basis of existing individuals – i.e. taking existing structures of sex(uality) and gender and then asking what has produced them – an operational method would demonstrate not only that sexuality cannot be fully accounted for by grasping it only in terms of its structures – whether vital, psychic, social, techno-symbolic *or* cultural – but that there is an *operational excess* over any such structures. It is precisely this excess – the ontogenetic operation of sexuation itself – which can never be eliminated because it is constitutive of the structures themselves, that constitutes the most significant contribution of an ontogenetic study of sexuality.[12] The originality of this contribution is illustrated by Simondon's own critique of Freud, who, even when attempting to provide an ontogenetic account of the sexuate subject, begins with a constituted individual rather than with the pre-individual

reality anterior to individuation. As such, Freud (1990) understood each infant to contain *within itself* the full potentiality of sexuation as a 'polymorphous perversity' that must be moulded through techniques of repression and sublimation, the very resolution of which would determine the individual's constitutional pathology. From an ontogenetic approach, on the contrary, the sexuate subject must be studied in its full *polyphasic dimensionality*: its genesis from a sexuate *pre-individual* reality, its belonging to a bimodal operation of *individuation*, and its *transindividual* stabilization through the invention of psychic and collective significations. This is why Simondon argues, against Freud, that 'pathologies' do not 'belong' to the *individual*, but instead 'arise when the discovery of the transindividual is missing, that is, when the load of nature [i.e. pre-individual] that is in the subject...cannot meet other loads of nature in other subjects with whom it could form a transindividual world of significations' (2013: 300). From this point of view, not only does the emphasis on the sexual or gendered individual as an artefact of techno-symbolic or cultural operations overlook the ontogenetic operation of sexuation, it also represents a *retreat* from a *collective resolution* to the problematic of sexuate individuation.

What sort of queer-feminist theory and politics might therefore arise from such an ontogenetic approach to sexuality? I will address this in conclusion by taking off from Simondon's own proposals for a 'technical culture'. Simondon begins his book on technics by arguing that modern culture has failed to keep pace with the rapid acceleration of technical evolution, leading to a situation in which technical objects have been 'banishe[d]...into a structureless world of things that have no *signification* but only use, a utility function' (2017: 16). As the process of technical invention is increasingly limited to a handful of specialists, technical objects are no longer stabilized in the cultural system through the psychosocial significations necessary to create a condition of resonance between our present vital and technical milieus. This is where Simondon's thinking of technics meets his philosophy of individuation, for the veritable operation of technical invention relates individuals not 'by means of their constituted individuality' but rather 'by means of this weight of *pre-individual* reality, this weight of nature that is preserved with the individual being, and which contains potentials and virtualities' (2017: 253). As such, the object of invention 'expresses what is *least* attached to the *hic et nunc*' by putting to work the *apeiron* attached to the individual being that 'designates what is original, prior even to the humanity constituted in man' (2017: 253). This link between technicity and individuation enables Simondon to propose an alternative path to overcoming the alienation of the modern technological world: 'the true path toward the reduction of alienation', he writes, 'would not be situated within the domain of the social (with the community of labour and class), nor in the domain of inter-individual relationships that social

psychology envisages, but at the level of the *transindividual collective*' (2017: 254). Instead of working to integrate technical objects into pre-existing vital or psychosocial structures and cultural schemas, a *technical culture* would use the mediating power of technicity to draw on pre-individual potentialities for the invention of *new* individual and collective structurations and cultural significations. Simondon's proposals thus gesture not to a politics of labour focused on species-level activities or a politics of psychosocial identities, but a politics of *transindividual invention*.

It is here that I would like to extend Simondon's proposals for a technical culture to what I would call a *culture of sexuation*. Although this is not a move that Simondon made, his thinking nevertheless prepares the ground for it. In *L'individuation*, Simondon raises the problem of sexuality in a section on the 'Transindividual Character of Signification'. Here, he argues that while sexuality should not be *equated* with transindividuality, it serves as an '*inspiration* and *incitement* to the collective [i.e. transindividual]' precisely because sexuality, as a *bimodal* individuation, 'makes the subject understand that he is not a closed individual, that he does not possess aseity' (2013: 299). But when the sexuate individual is incapable of discovering significations that place it in resonance with the collective, there arises the potential for a pathological 'conflict between the modality of individuation, in the form of sexuality, and the charge of pre-individual reality that is in the *subject* without being enclosed in the *individual*' (2013: 300). This 'pathological relation to the other', as Simondon puts it,

> is that which lacks significations, which is dissolved in the neutrality of things and leaves life without polarity; the individual then feels that he is becoming an insular reality; abusively crushed or falsely triumphant and dominating, the subject seeks to connect his individual being to a world which loses its meaning [*signification*]; the transindividual relation of signification is replaced by an impotent relation of the subject to neutral objects, some of which are his fellows. (2013: 300)

Throughout her work, Luce Irigaray (1993a, 1993b, 2001) has diagnosed a similar pathological neutrality as the result of the substitution of a phallic ontology of the one (i.e. the individual) for a relational ontology of sexual difference. And while Simondon does not explicitly connect this neutral 'world of things' to technology – although technicity is the tendency to reduce the world to objects – Irigaray understands the history of technical evolution as the progressive displacement of sexual difference through the fabrication of a 'neutral' world that is actually isomorphic with masculine individuation. What Irigaray makes clear, then, is that if the world of technology is founded precisely on the neutralization of

sexual difference, then what Simondon calls the 'pathological relation to the other' – that without transindividual signification – is the most common one available to us within our prevailing cultural system. In this system, sexuality is largely grasped in terms of a technical *Scientia sexualis* in which it is 'approached in such a roundabout fashion, through animal ecology, the sexhood of plants, the more or less pathological language of our cells, the sex of our chromosomes, of our brain, etc.' (Irigaray, 1993b: 179). This, I think, explains why much queer-feminist thinking about the radical transformation of sex is dominated by a technoscientific imaginary. Thus, to the degree that a 'technical culture' remains at the level of *neutral* technical objects, it actually blocks one route to future transindividual invention (indeed the only 'inspiration' to the collective that Simondon names as such).

But instead of leaving sexuality as just another neutral *object* of technical apparatuses without any *cultural significance*, sexuation could be *amplified* through technical invention and stabilized in a new *sexuate culture*. This would require a shift in emphasis from imagining the potentiality of sex(uality) on the basis of what *technics* can do to grasping sexuation as a *source* of and incitement to invention. As sexuate, we are traversed by an inhuman dynamism that exceeds any form of our hominization – vital, psychosocial, technical, cultural – and that places us in touch with the *apeiron* with which we are charged. And in a world dominated by technical neutrality, the transindividual significance of sexuality largely remains to be invented. Such invention should not be mistaken as merely a change in representations or symbolic forms. Rather, for Simondon, the true operation of invention constitutes a transformation of what it means to be 'human' at every level:

> Everything takes place as if the corporeal schema of the human species had been modified, as if it had dilated, and received new dimensions; the order of magnitude changes, the perceptual grid is broadened and differentiated; new schemas of intelligibility are developed . . . it is a matter of incorporation, which, on the collective level, is functionally equivalent to the appearance of a new vital form. (2015: 21)

The amplification of sexuation through transindividual acts of invention would therefore amount to the becoming of sexuality itself. Such a becoming would be both *evolutionary* and *revolutionary*, surpassing existing vital and social normativities to institute entirely new individual and collective structures, functions, and relations. But as a bimodal individuation that limits each individual's potential, the future becoming of sexuality can *only* take place relationally with the sexuate other(s). Here is where any potential sexuate culture necessarily meets what Irigaray has called an 'ethics of sexual difference' (Irigaray, 1993; Seely, 2016). In such

a transindividual culture of sexuation, following Simondon's ethics, sex would take place not 'between' individuals, but *through* them, with each individual amplifying the sexuate becoming of the other(s) and of sexuality itself. And in this way, I think that what Simondon says of the technical act – as a neutral act of 'man' – must be all the more true of the *relational* act of sexuate invention: it 'is a wager, a trial, an acceptance of danger; it conveys the capacity to evolve, and represents the strongest and most concrete chance of evolving ever granted to humanity' (2015: 19).

ORCID iD

Stephen D. Seely ⓘ https://orcid.org/0000-0001-9711-5100

Notes

1. As it was drafted prior to the English translations of Simondon's texts, this essay was written using the French versions with the translations given here being my own. Citations have subsequently been made consistent with the published English translation of *Du mode d'existence des objets techniques*. Translations from *L'individuation* remain mine.
2. While Simondon's concept of pre-individual being draws considerably from quantum physics, he is always careful not to reduce the pre-individual to a quantum state because, as unphased and unstructured, the pre-individual is 'pre-physical' (see Simondon, 2013: 327). The philosophical antecedent of Simondon's pre-individual is the pre-Socratic thinking of 'nature' or 'being' as *physis*, particularly Anaximander who understood the ultimate reality of *physis* as *apeiron* (unlimited, boundless) (see Simondon, 2013: 357–8). Indeed, throughout *L'individuation*, 'nature' and *apeiron* are often used as synonyms for pre-individual being. While several of Simondon's commenters focus on the relation of the pre-individual to quantum physics, Elizabeth Grosz situates it in a long philosophical history of 'incorporeality' (see Grosz, 2017: 169–208).
3. In fact, Simondon says that a 'true individual' exists only insofar as it is coupled with its milieu, or its 'system of individuation'; otherwise it is actually an 'individuated being', the result of individuation (2013: 62). A crystal, for instance, is therefore only an individual during the process of individuation in relation to its pre-individual conditions; the detached crystal after the process of crystallization is a 'relic of individuation' (2013: 233).

4. For an argument about how Simondon's concept of polyphasic individuation might enrich feminist theorizations of identity, see Grosz (2012).

5. See Myra Hird's (2004) interesting work on bacterial and fungal sexes, which draws much from Margulis. I strongly disagree, however, with her extension of the multiplicity of sexes in such living forms to humans.

6. In his discussion of different modes of reproduction, Simondon characteristically rejects any substantialism, both as a monism in which the entire individual is 'hereditary substance' (as in Étienne Rabaud) and the soma-germ dualism of August Weismann. For Simondon, the gametes are 'elementary individuals' that are 'comparable to the smallest living units that can exist in an autonomous state', although very limited in time and space and only in highly complex bio-chemical conditions (2013: 182). In this way, Simondon tempers the dichotomy between 'sexual' and 'asexual' reproduction, because in all reproduction there is 'a passage through a phase of elementary individuation'. Spermatogenesis and oogenesis are elementary individuations that produce sexuate elementary individuals because the pre-individual potentiality from which they come, carried as it is by sexuate individuals, is sexuate. In budding, on the other hand, elementary individuation occurs when part of the colony breaks off to start a new colony: this elementary individual (the polyp) is not sexuate because the pre-individual reality from which it comes (the colony) is not sexuate.

7. Because both individualization and personalization are transductive processes of establishing communication between different domains or phases of the individual (from the pre-individual to the transindividual), there is no direct, linear connection between how an individual's sexuality is propagated through its corporeal-psychic structures and functions to its personality. Such a polyphasic notion might be quite useful to trans theory.

8. The phrase 'techno-symbolic milieu' is Andrea Bardin's (2015: 174) for the 'envelope' of technical objects and symbols, as distinct from the organic milieu. Simondon's account of the passage from the vital milieu through technics to 'culture' is extremely complicated and never definitively presented as such. This section of the essay therefore draws substantially on Bardin's careful systematic reconstruction, which situates Simondon's theory of technicity in relation to his later lecture series, 'Imagination et invention', as well as to numerous supplementary texts (mostly compiled in the volume Sur la technique) and the influence of thinkers like André Leroi-Gourhan (see Bardin, 2015: esp. Part III).

9. Once again, not all (or even most) interactions between individuals constitute (trans)individuation and thus it is entirely possible for social functions to take place at the level of pre-existing technics and symbols in inter-individual interactions that do not produce new psychic and collective structures or significations. Because the human milieu is both vital and techno-symbolic, continuing to live among existing technics and symbols is tantamount to operation at a purely vital level. Simondon believes that while the symbolic function tends toward normative stabilization in the specific social group that gave rise to it (analogous to vital normativity), technicity is a tendency toward invention because it crosses both vital and social normativities to encounter the *outside* of the existing techno-symbolic envelope and institute a new mediation with the world (see Bardin, 2015).

10. In *L'individuation*, Simondon defines a 'mould' as a 'dispositif for producing an information that is always the same with each moulding' (2013: 57), which, I think, is a particularly illuminating way of understanding the 'disciplinary' or 'orthopaedic' dispositif of sexuality as described by both Foucault and Lacan.

11. In this sense, Judith Butler's *Gender Trouble* (1990) can be read not as a prescription to resist disciplinary sexual norms through gender plasticity, but as a descriptive account of what happens when the disciplinary societies shift to control societies and power operates more by permanent modulation than by orthopaedic moulding, i.e. the spaces of confinement that acted as factories for moulding the sexed body in the disciplinary societies have been displaced by the constant, compulsory, auto-fabrication of 'gender'.

12. As Bardin (2015: 233) writes, 'If there is in general – at all levels: physical, biological, psychic, and collective – an excess, a surplus of the ''operation'' over the ''structure''…and if this surplus cannot be eliminated precisely because it constitutes the structure itself, Simondon's philosophy authorises the reformulation of the relation between the social structure and political action in terms of an ''internal excess'' characterising social systems.'

References

Bardin, Andrea (2015) *Epistemology and Political Philosophy in Gilbert Simondon: Individuation, Technics, Social Systems*. London: Springer.

Barthélémy, Jean-Hughes (2009) *Du mort qui sasait le vif*: Simondonian ontology today, trans. Justin Clemens. *Parrhesia* 7: 28–35.

Butler, Judith (1990) *Gender Trouble: Feminism and the Subversion of Identity*. New York: Routledge.

Combes, Muriel (2013) *Gilbert Simondon and the Philosophy of the Individual*, trans. Thomas La Marre. Cambridge, MA: MIT Press.

Deleuze, Gilles (1992) Postscript on the societies of control. *October* 59: 3–7.

Foucault, Michel (1990) *The History of Sexuality, Volume 1: An Introduction*, trans. Robert Hurley. New York: Vintage.

Foucault, Michel (1994) *Dits et écrits, 1954–1988: Tome III: 1976–1979*. Paris: Éditions Gallimard.

Freud, Sigmund (1990) *Three Essays on the Theory of Sexuality*, trans. James Strachey. New York: Basic.

Grosz, Elizabeth (2012) Identity and individuation: Some feminist reflections. In: De Boever, Arne, Murray, Alex, Roffe, Jon and Woodward, Ashley (eds) *Gilbert Simondon: Being and Technology*. Edinburgh: Edinburgh University Press, pp. 37–56.

Grosz, Elizabeth (2017) *The Incorporeal: Ontology, Ethics, and the Limits of Materialism*. Durham, NC: Duke University Press.

Guchet, Xavier (2012) Technology, sociology, humanism: Simondon and the problem of the human sciences, trans. Mark Hayward. *SubStance* 41(3): 76–92.

Harvey, Olivia, Popowski, Tamara & Sullivan, Carol (2008) Individuation and feminism: A commentary on Gilbert Simondon's 'The genesis of the individual'. *Australian Feminist Studies* 23(55): 101–112.

Hird, Myra (2004) Naturally queer. *Feminist Theory* 5(1): 85–89.

Irigaray, Luce (1993a) *An Ethics of Sexual Difference*, trans. Carolyn Burke and Gillian C. Gill. Ithaca: Cornell University Press.

Irigaray, Luce (1993b) *Sexes and Genealogies*, trans. Gillian C. Gill. Ithaca: Cornell University Press.

Irigaray, Luce (2001) *To Be Two*, trans. Monique Rhodes and Marco Cocito-Monoc. London: Routledge.

Lacan, Jacques (2001) *Autres écrits*. Paris: Éditions du Seuil.

Lacan, Jacques (2006) *Écrits*, trans. Bruce Fink. New York: W. W. Norton & Co.

Margulis, Lynn and Sagan, Dorion (1986) *The Origins of Sex: Three Billion Years of Genetic Recombination*. New Haven: Yale University Press.

Margulis, Lynn and Sagan, Dorion (1997) *What Is Sex?* New York: Simon & Schuster.

Scott, David (2014) *Gilbert Simondon's Psychic and Collective Individuation: A Critical Introduction and Guide*. Edinburgh: Edinburgh University Press.

Seely, Stephen D. (2016) Does life have (a) sex? Thinking ontology and sexual difference with Irigaray and Simondon. In: Sharp, Hasana and Taylor, Chloe (eds) *Feminist Philosophies of Life*. Montreal: McGill-Queens University Press, pp. 108–127.

Sharp, Hasana (2011) *Spinoza and the Politics of Renaturalization*. Chicago: University of Chicago Press.

Simondon, Gilbert (2008) *Imagination et invention (1965–1966)*. Paris: Les Éditions de la Transparence.

Simondon, Gilbert (2013) *L'individuation à la lumière des notions de forme et d'information*, 2nd edn. Paris: Éditions Jérôme Millon.

Simondon, Gilbert (2015) Culture and technics, trans. Olivia Lucca Fraser and Giovanni Menegalle. *Radical Philosophy* 189: 17–23.

Simondon, Gilbert (2017) *On the Mode of Existence of Technical Objects*, trans. Cécile Malaspisna and John Rogove. Minneapolis: Univocal.

Venn, Couze (2010) Individuation, relationality, affect: Rethinking the human in relation to the living. *Body & Society* 16(1): 129–161.

Stephen D. Seely is an Academic Track (NUAcT) Fellow in the School of Geography, Politics, and Sociology at Newcastle University. His work in feminist and queer theory has appeared in *Sexualities*, *Feminist Formations*, *Social Text*, *WSQ: Women's Studies Quarterly*, *PhiloSOPHIA* and the *Australian Feminist Law Journal*, and his book *The Spirit of Revolution: Beyond the Dead Ends of Man* (co-authored with Drucilla Cornell) was published by Polity in 2016.