Tucker, I. M. '(Re)thinking body-technology relations with Michel Serres: Emotion, sense and the emergence of algorithmic appropriation. ***Media Theory, Special Section: Michel Serres and Media Theory.*** **In press**

(Re)thinking body-technology relations with Michel Serres:

Emotion, sense and the emergence of algorithmic appropriation

Abstract

This paper highlights several key principles of the work of Michel Serres and considers them in relation to life in contemporary socio-technical worlds, e.g. notions of relationality, noise, bodies, sense and data. A journey with Serres involves seeking novelty in spaces 'outside' of existing knowledge producing practices. This paper highlights how, for Serres, mediation as *noise* does not operate via a singular universal interface, but is multiple and processual – in essence, everything is mediation. Using contemporary examples of new technologies (e.g. AI and play writing; AI and emotion) the paper considers the value of a Serrian mode of thought for understanding emerging relations between bodies and technologies. It concludes with acknowledging the growing political focus on Serres' later work, in which he became increasingly concerned to (re)define the contract between humanity and the world. His notion of appropriation through pollution encompasses notions of information and data as forms of *algorithmic appropriation*, as much if not more, than physical pollution.

Keywords

Michel Serres, algorithmic appropriation, noise, relationality, bodies, technologies, emotion, AI

Introduction

'AI: When a Robot writes a play' is the first play written almost entirely by artificial intelligence (AI). Its central character is a robot whose human 'master' (Viktor) has recently died and now the robot must face the world alone (see https://theaitre.com/ for full details). The play is a contemporary example of a new connection between art and technology (i.e. play writing and AI). It is also a recent test of the scope of AI, namely whether it can replicate the

creative art of play writing – and in doing so, extend the ways that AI can potentially undertake and complete previously human-only skills and competencies. The play uses an open source text-based AI developed by the technology entrepreneur, Elon Musk, called GPT-2, and is a collaboration between the Svanda Theatre and mathematicians at the Charles University (both in Prague) The developers identified key limits of the AI, such as the only being able to generate dialogue between two characters at a time. Despite such limitations, the producers stated surprise at some of the ways that the AI generated novel dialogue. Reviews of the play suggest it demonstrates the AI's ability to create dialogue between two individuals, but that it offers little in terms of narrative and character development (https://www.theguardian.com/stage/2021/mar/01/on-the-scene-like-a-sex-obsessed-machine-when-a-robot-writes-a-play-ai). As such, reviews conclude that AI has certainly not developed the creative potential to write plays to the standard of human playwrights.

This novelty of the connection between the previously unconnected areas of play writing and AI would likely be of significant interest to the French philosopher Michel Serres (1930-2019). It opens up new possibilities to *travel* between science and art, which was a central principle of Serres' work. I use the example to introduce the kinds of real-world events that catalysed the significant invention and creativity of Serres' writing. As such, it is a good starting point to consider the contribution of Serres' thinking and how it might help us understand and engage with environments subject to change and transformation. Serres would not necessarily be interested in whether the AI could satisfactorily write a play, but rather what novel experience and knowledge might emerge through a new art-technology connection.

One of the challenges in writing 'about' Michel Serres is that his work defies pigeon-holing. It is not easily located in a specific discipline, nor is its value easily reduced to specific areas of research or practice. The breadth and depth of his thought was of such scale that in many ways, it transcends existing disciplinary boundaries (which is just how Serres wanted it). As such, there are multiple ways in which one could approach a paper discussing his contribution to contemporary thought. In this essay I focus primarily on Serres' writing on bodies and technologies. The role of the body as a cultural object was a central concern for

Serres, and something he was particularly exercised by in relation to the growing presence of technologies and data in society (Serres, 2015). Serres developed his concept of sense partly as a way to keep open a novelty of embodied experience distinct from knowledge making practices of language. In the current paper, I develop the focus on sense and bodies in relation to technologies designed to elicit, replicate and produce knowledge of bodies in increasingly sophisticated ways, and which are often suggested to exceed the capabilities of bodies to *know themselves*, e.g. emotion-related AI (Ellis & Tucker, 2020).

It is commonly said that Serres' philosophy is of value as much as for *how* it is written (style) as it is of *what* he said (substance) (Brown, 2002; Tucker, 2011a; Watkin, 2020). This is somewhat of a simplification but is not without an element of truth – and is not to downplay the value of the *substance* but more to point to the emphasis played on the journey of reading *with* Serres. It almost seems paradoxical that Serres was concerned to speak to general movements in society (e.g. relations between humans and technologies) and to do so through localised specificities (e.g. children's' use of smartphones in *Thumbelina*) but in such a way that was not suggesting his philosophy provides models that can be neatly applied. While he was centrally concerned with events and activities, he was also primarily driven by offering new ways of understanding *how* science, literature and art can connect in the creation of novelty. As such, it is important to remain aware of *where* Serres was trying to move us in our thinking. His writing was not just offering new models of objects, subjects etc, but to move *ahead* of current thought in the search for novelty and invention.

Foundations of Michel Serres' philosophy

In this section the aim is not to characterise a Serrerian *model*, as that would be anathema to his desire to escape categorisations and classifications. He did not seek, nor identify with, a specific discipline, preferring to point to the value of moving across disciplines in the search for novelty and invention. Nevertheless, there are some principles underlying his philosophy of movement and transformation. It is important to note the biographical journey of Serres' thought, moving as it does through his academic and non-academic life (e.g. time in the French Navy). His background in mathematics clearly initiated his early work on Leibniz, with a growing concern with the *contract* between humans and the natural world emerging throughout his career. His scope and range was broad – which on the one

hand makes his work feel fresh and original, but on the other hand can make it difficult to draw specific conclusions. In a sense, there was not an *end* to the journey of his writing (it certainly will not end following his passing in 2019). Defined end points, closures, conclusion, denouements, were not currencies valued by Serres. The question in thinking about the value of his contribution is more about where thinking and journeying in and through his writing takes you. It will undoubtedly move you – the question is where and what insight might be gained along the way.

There is no single journey with Serres. There are as many starting points as there are books and concepts. One's engagement with Serres is likely to begin with a concept that speaks to one's concerns, e.g. the body, mediation, communication, information theory. One may read a single book relating to that concern or may follow conceptual ideas through different books and topics. While Serres' work defies summary, there are conceptual threads that can be followed through multiple books, e.g. notions of noise/parasite, information/communication, topology, bodies, appropriation. They shift and mould depending on the context, but a familial similarity can be felt across his writing. In the next section I draw out key threads through the concept of sense, which I argue are valuable for considering how Serres thought can provide insight regarding contemporary relations between bodies and technologies.

Sense and technological worlds

"Words fill our flesh and anaesthetise. It has even been said, and written,

that the word was made flesh (Serres, 2008: 59)

In *Les Cinq Sens* Serres undertakes a journey across multiple terrains in the development of an *expanded* concept of sense, which he claims acts to 'federate the body' (Serres, 2011a). Serres uses sense to argue for a layer of experiential knowledge that can operate 'outside' the cloak of language. The quote above highlights the dominance of language that Serres felt at the time. This was not so much language itself, but linguistic idealism (Watkins, 2020). The above quote from *Les Cinq Sens* emphasises this point, with language seen to dis-embody flesh – to become flesh and in doing so to nullify the immediacy of sensory experience. Serres attack on language morphed in his later writing to a battle with uses of new

technologies. It is important to note that he welcomed new technologies but was concerned with the impacts of their use on society and the natural world. The role of the concept of sense for Serres extends beyond the physiological-perceptual pathway that sensation is traditional thought to operate, to a more pivotal way in which bodies move and know the world. There is an immediacy to sensory experience that operates on a distinct register to that of language – one that Serres thinks that language overruns and territorialises, making it difficult to retain a notion of original sensory experience as part of knowledge making practices. This was part of his empiricism of the *given* – of the *hard*, distinguished from the *soft* knowledge producing practices of language. This is not an absolute binary positioning, as hard and soft can intermingle in the ongoing flow of life. The distinction is used to (re)gain a specificity of sense. Furthermore, it is the hard of sense that is imbued with the potential for novelty – for new experience to find a way through the covering of language to fresh and original novelty.

Serres' empiricism is commonly deemed to be an explicit driving force (Assad, 1999) – a move against the epistemological masks of language and phenomenology – which Serres considers as obfuscatory. This is a key motivation for *Les Cinq Senses*, in which he wants to get as close as possible to the empirical given of sense. For Serres, we know the world through sense, as much if not more, than we do through language and meaning. This concern with an empiricism based on the sensory given of embodied experience is due, at least in part, to the context in which Serres wrote *Les Cinq Senses*, namely the dominance as he saw it of linguistic idealism in French philosophy at the time. For Serres, language and discourse came to dominate knowledge, and the role of the senses was lost. It should be noted that his focus on sense, while framed around sight, hearing, taste, smell and touch, was not presenting a physiological account of five distinct senses. His aim was as much about shifting cultural thought and knowledge to thinking of the world as sensorially defined and experienced. What new modes of thought emerge when we open up to sense? For instance, his idea that hearing does not only involve the ear, as per traditional thought, but for Serres, the whole-body acts as a 'listening device', receiving, processing and emitting *information*. An example of this would be the experience of taking psychiatric medication. One *knows* the effect it is designed to have on the body, namely a reduction of symptoms relating to forms of mental distress, such as unwanted unusual beliefs. However, once

ingested, the body is primed to *listen* for the impact is might have, e.g. so called 'side effects' such as nausea, loss of appetite, increased heart rate – all can be experienced as bodily experiences *heard* by the body following the taking of psychiatric medication (Tucker, 2011b). Multiple layers of mediation can be at work here, which the body *hears* – such as through the gut, bloodstream, heart etc. Using an example such as this is in keeping with Serres' approach of using the local-singular to draw out more general points (e.g. about bodies plural).

Relationality, noise and a philosophy of the middle

The potential for novelty in Serres' work arises in part due to not relying on an ontology of defined essences and inherent properties. Serres' philosophy of the *middle* situates life giving energy to that which operates 'in between' objects and events. In *Genesis* (originally tilted *Noise* (Assad, 1999)), Serres situates relationality as the key theme and conceptual offering of the book (Serres, 1995). Serres frames the importance of relations, as part of a move to focus the unit of analysis 'in between' objects, theories, scientific discourse. Serres' move is to interrogate what explanatory power can be leveraged from situating thought and practice in the spaces in between existing concepts and forms – and to *create* new 'in betweens', particularly between science, art and literature. He frequently draws on metaphors from literature throughout his books in seeking to cleave new spaces 'outside' of mainstream discourses as spaces of invention. Through developing original connections Serres literally creates novelty in his writing.

As previously mentioned, Serres' philosophy is driven by a desire to move away from the silo-thought of operating within existing disciplinary boundaries. His connectionist thinking involved a substantial focus on communication. But for Serres communication is not a simple process of information passing between two objects/subjects but involves a commonly excluded *third* of the communication itself. For Serres, communication, be it through language or information, involves a layer of noise – like the static on a telephone line. This noise is traditionally thought to trouble and/or obstruct the communication, to jeopardise its success. And yet, for Serres, the noise is not only an ever-present part of communication, it is a necessary part too. Indeed, it acts as *energy potential*, as a 'background' space from which novelty can arise. Serres does not see noise as a by-product (akin to the

model of interference in classic information theory) but rather as a necessary and vital source of novel energy.

The importance of noise to Serres' thinking becomes clear when we consider that he sees all objects and subjects as defined primarily in and through their relations. He does not adhere to a view of ontologically distinct *forms* communicating, but rather as moving, transforming patterns of relations. It is the noise that is in a sense everywhere – and acts as the potentialized backdrop from which new relations and connections emerge and come to operate – how order emerges from chaos/disorder. In a sense, this is Serres' notion of mediation – life as communication and relation means that noise is, in effect, everywhere. Mediation is then at the heart of life. Mediation becomes the unit of analysis – and objects and subject are seen always-already in relation to mediation. In this framing of communication mediation becomes the primary source of potential future knowledge and experience. The principle being that if one does not rely on an ontology of individual beings emerging from a set of inherent properties, then a different concept is needed, and for Serres it is *noise* (similarities exist with Simondon's preindividuation, Deleuze's virtual). As such, noise is a core pillar of Serres' philosophy, and is driven by a concern that it is often ignored or actively downplayed in attempts to creative positivist notions of knowledge. This is an error for Serres, as it ignores the creative energy potential of noise. Whilst Serres did not reify noise in the sense of locating it in a particular entity or event, his focus on dominant modes of knowledge production in the eras his work spans, e.g. language, materiality, suggests he thought of noise in relation to dominant practices. In the next section I explore the value of this move in relation to technologies and associated notions of information, data and algorithmic appropriation.

Technologies, emotion and algorithmic appropriation

The domination of information over sense that Serres considers a *technologization of experience* was primarily referring to the role of language in continental philosophy in the second half of the 20th century. In his 21st century work this focus shifted somewhat to the seemingly all-powerful role of information, data and algorithms. While in *Les Cinq Sens* Serres points to the word becoming flesh, in the current technological age, it is now increasingly information and algorithms that seek to deliver knowledge of the body. Digital technologies are

commonly considered to act as forms of mediation that capture store and aggregate data *about* individuals. Communication and transmission are framed in linear terms, as tacking between bodies and technologies through increased aggregation. This mode of thinking appears to resonate with the reality of everyday use of technologies. However, what is missed in such an account is the situating of data communication in relation to background noise.

Consider the development of algorithms that are designed to identify and capture facial expression data in terms of emotional categories. This is a burgeoning field, used in many areas (Ellis & Tucker, 2020). For example, in Hong Kong during the Covid-19 pandemic, schools used software that claimed to be able to identify children's' emotional state when undertaking remote learning (https://4littletrees.com/). The rationale being that if a child is identified as losing attention, they can be prompted to re-engage, and data about engagement can be fed back to teachers. On the face of it, this might seem like a reasonable endeavour. However, what is lost is what such an event makes possible in terms of surveillance by commercial companies. Data generated from individual children's' activity is aggregated, forming a database that the company can use to sell its services to others, on the basis that such data increases the company's knowledge about engagement with remote learning. There are also the significant questions about the emotion science underpinning such technologies, the critiques of which have been extensively made elsewhere (Barrett, 2018; Ellis & Tucker, 2020; McStay, 2020).

The point here is not to trouble the model of data communication between body and technology in relation to emotional AI. What I take from Serres is more a concern about how we come to live in environments in which such technologies are increasingly present. To use another term of concern from Serres, the question becomes more about what kind of *contract* between humans and technologies do we need to live with algorithms that increasingly try to bypass human subjectivity in their interpretation and categorisation of human psychological life? In *Hominescence* Serres points to fundamental changes in the relations between bodies and the environment during the 20th century, with "[t]he forces shaping our bodies now come more from the environment we have built than from the given world, more from our culture than from nature" (Serres, 2019: 41). Technological change

accelerated this process, and we now very much live in a world of our making. Furthermore, this world 'acts back upon us' – the world is not at our bidding because we created it – but rather feeds 'back' into future activity, e.g. through algorithmic activity such as personalised advertising. Therefore, technologies are not only tools for human use but become active parts of future body-environment relations. It is this reality that Serres seeks to direct our attention to, particularly in relation to contemporary information societies. Technologies such as social media and artificial intelligence, while designed by human bodies, are not merely tools, but come to shape our environments. This is not though to fall into a determinist trap of thinking that they wrestle control over life from humans. Instead they operate in relations with bodies and environments, with questions of control and agency failing to capture the relational and distributed ways they operate. A Serrian reading encourages us to remain 'open' to new developments through which new *contracts* can emerge. Serres wrote about the contract between humans and the natural world in *The Natural Contract* (1995), which is a concern that threads through his work – he was undoubtedly alarmed by the impact human life on the natural world. Furthermore, the idea of the social contract was also a concept with which he drew attention to relations between groups, communities through to nation states. While he never really offers an answer or a manifesto for a *better life* per se, he was concerned about and informed by pointing to problems in the world and presumably, at some level, seeking to generate conceptual insight regarding such debates. It is this point that captures the value of Serres' thought for contemporary social scientific research and practice.

Thinking and conceptually travelling *with* Serres can (re)position our analytic starting points, away from sometimes entrenched disciplinary specific positions, to spaces of novelty that provide original perspectives on existing problems. Serres does not necessarily lead us to provide new answers to existing problems, but he can encourage us to find new vantage points and perspectives that might facilitate novel and productive ways forward. Serres does not offer new models for understanding, but rather offers new systems of thought. He invites the reader to go on a journey with him. Furthermore, journeys will always be multiple and not programmed in advance, as everything is related to everything else. This means that isolating objects (or subjects) is not really possible. In relation to new information

technologies, this provides an important counterpoint to concerns that technologies are gaining too much power over life, e.g. the wide range of industries utilising AI. In a sense resistance here, in Serrian terms, is not about trying to stop development and use, but about remaining open to the changes that emerge and intervening where possible.

Returning to the opening example of the *AI: When a Robot writes a play*. The impact of the play can be considered on multiple levels, from its artistic value to its value for the scientific community due to it demonstrating the growing range of potential uses of AI. But it can also be considered to operate (and potentially) impact in *expanded* ways. For instance, its impacts for tech developers will be the extent to which it could complete the task to a level achieved by a human playwright – with the limits of 1-2-1 dialogue and lack of plot development being key lessons learnt. However, it also provides insight regarding bodies and technologies through the content of the dialogue it creates. For instance, content relating to violence and sexual activity featured prominently in the play. This points to the high levels of violence and sex-related content that constitute the background noise of much internet activity. The AI was only as 'intelligent' as the underlying content from which it generated dialogue for the play. The insight is not only about the capacity of the AI to write a play, but also about how it generates dialogue from existing internet content, and the nature of that content therein.

Serres came to conceptualise his connectionist philosophy through the notion of *appropriation* through pollution. Here his arguments move toward a more political philosophy, in which he positions the effects of human pollution as unequivocal. Being Serres, his contribution to this debate offered originality. For instance, by inverting the argument by positioning a quest for cleanliness and good hygiene to actually be polluting. Here, the accusation is placed firmly at the foot of Western developed countries, whose *cleanliness* has come at the cost of polluting developing countries. Serres returns to the idea of needing a new natural contract that re-balances the cleanliness economy, and in doing so reduce inequalities caused by industrialised pollution. He also points out that appropriation is not only about physical environments, it increasingly relates to digital environments. In *Malfeasance,* he makes this point through an example of the use of signs and codes, and how this can appropriate subjectivity. This starts with the idea that we only have a 'lease' on

objects bought from companies that keep their signature on products, e.g. company logos on clothing – "we pay the manufacturers, but somehow they keep what they relinquish" (2011b: 25). Serres seeks this phenomenon spreading through data and information – something that can be captured through the notion of *algorithmic appropriation*. This is due to the perceived rights of use of so-called personalised information. Traditionally, Serres saw appropriation through wilful individualised acts, such as an animal marking a territory with urine. Now, so much information related to individual bodies is generated, a sense of individual control is lost. We can no longer use it to appropriate our bodies and lives. This is a *softer* version of one's name, what Serres refers to as our "*rental* name" (2011b; 89). Appropriation of the *soft* in the form of generating data from individual and collective activity is a relatively new relationship between humanity and the natural world.

What Serres offers is not a model of understanding as such, but a call to arms. He urges us to think creatively and inventively, outside of existing structures of thought. In his earlier work, this was not because he thinks that existing structures are incorrect or misplaced (although in places they may well be), but because true novelty can only arise through new connections. He was concerned with conceptual novelty to develop new knowledge practices that transcend existing disciplines. For instance, he likely would have valued the inventive potential of new art-science connections such as AI and play writing - not judging them terms of accuracy and proficiency, but rather in terms of novelty and invention. He was a true transdisciplinarian, working across boundaries between art, literature, science, and the events of everyday life. The emphasis in his later (i.e. 21st century) work was increasingly on the impact of humanity on the natural world, meaning that his emphasis on novelty and invention is not apolitical nor ignorant of notions of morality and ethics. Indeed, in his later work (i.e. Malfeasance, Thumbelina) he became increasingly concerned to address problems associated with the contract between humanity and the world – firstly in terms of appropriation through pollution of physical world, and secondly appropriation of bodies, social and cultural life through mass informationalisation and algorithms. Serres argues that novelty is needed to create new ways of being in the world in response to emerging forms of algorithmic appropriation. This world is well and truly of our making – and Serres argued, in his own inimitable way, that we need to start taking our responsibilities towards it very seriously indeed.

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