Anthropocenes
HUMAN, INHUMAN, POSTHUMAN

Nordell, E. (2021). *Code is Law* – Deterritorialisation and Reterritorialisation of Law, *Law is Code* – Cyberspace, Personalisation Algorithms and Human Cognition. *Anthropocenes – Human, Inhuman, Posthuman*, 2(1): 10. DOI: https://doi.org/10.16997/ahip.932

RESEARCH

Code is Law – Deterritorialisation and Reterritorialisation of Law, *Law is Code* – Cyberspace, Personalisation Algorithms and Human Cognition

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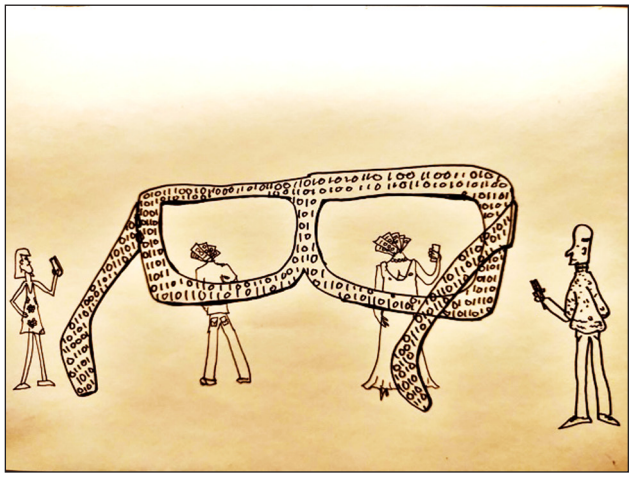
This narrative is a theoretical exploration of the encounter between law and cyberspace. It is a conversation about what lines of de/reterritorialisation can do with that encounter. It is *becoming* in contact with Gilles Deleuze and Felix Guattari's concepts: rhizome, assemblage, becoming, territorialisation, deterritorialisation, and reterritorialisation and with Lawrence Lessig's theory *code is law*. Code may be law, but perhaps law can also become code. This paper thinks about democratic states in which there is a desire to let law proceed from the people, and about how the law and code seem to affect human behaviour in similar ways. As an example, I explore how code in personalising algorithms affects human cognition; how code that enables certain cognitive processes can disable certain others; and how code regulates human cognition. The paper thinks about how law is territorialised in the encounter with cyberspace, deterritorialised when code challenges legal sovereignty, and how it can reterritorialise through *'code is law'* or through *'law is code'*. I am suggesting that, in this process, a need is emerging: a need to let code proceed from the people.

Keywords: law; code; algorithms; cognition; democracy; territorialisation; cyberspace



You taught me to navigate people's minds.
But after what happened, there weren't a whole
lot of legitimate ways for me to use that skill.
– Dom Cobb (the thief who steals and
manipulates thoughts in the Christopher Nolan
2010 movie *Inception*)

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Enquiring and Theoretical Structure

What is the matter?

> What is this new, which wears and breaks?
> Yes, of course it hurts when buds burst,
> hurts for that which grows
> and for that which closes.
> – Karin Boye (1935).[1]

In the narrative I want to tell about the world, there is something that matters. Or at least, that matters to me, the narrator of this narrative. I want to tell you about buds that are bursting and growing. I want to tell you about what is new. I want to tell you about the bud *law* and the new cyberspace. And how it hurts when buds burst.

This narrative is a story about the encounter between the bud *law* and the new cyberspace. The bud *law* that is bursting and the new cyberspace that wears and breaks. It is in this encounter that what is the matter comes into being. In democratic systems, there is a desire for the creation and transformation of law to proceed from the people (whatever/whoever they are).[2] This desire does not, however, appear to exist when it comes to the creation/production and transformation of code in cyberspace. Perhaps this sounds like a strange or even irrelevant comparison, but I will argue that this is not the case. Code in cyberspace seems to affect human behaviour in a way

similar to the way in which law affects human behaviour. What strikes me as troublesome is that, despite this similarity, there does not seem to be any societal desire to allow the creation/production and transformation of code in cyberspace to proceed from the people.

In light of this matter, this article opens up a new way of thinking about the encounter between law and cyberspace. It is a narrative about the architecture of cyberspace, *code,* as a line of flight. A deterritorialisation of *law* that is met by reterritorialisation. Reterritorialisation that can consist of *code is law* (code has effects similar to the effects of traditional law, code maintains and enforces legal regulations) or *law is code* (law is defined as code, code designs, develops and defines legal regulations). It is a conversation about what these lines can do with law and legitimacy. It is also a conversation about how algorithms that personalise information – architecture in cyberspace, *code is law* – regulate human behaviour; about what lines of de- or re-territorialisation can do with this encounter between code and human cognition; and about a need for *becoming*, a need to let 'code/law is code' proceed from the people. It is a narrative told by me in the sense of me choosing the focus, selecting the territorialisation in relation to the reterritorialisation. Of me choosing the middle.

The theoretical structure is mainly based on Gilles Deleuze and Felix Guattari's concepts: rhizome, assemblage, becoming, territorialisation, deterritorialisation, and reterritorialisation; Lawrence Lessig's theory of *code is law* and the four modalities that he believes regulate human behaviour; and Bruno Latour's model for understanding what nonhumans do (what their role is/what their functions are). In the context of this narrative, these concepts and thoughts can *become* in contact with each other since they can be put to work together to experiment with understandings of the reality of cyberspace and law.

Moreover, this article seeks to become a map of the narrative rather than a tracing. By trying to understand the encounter between law and cyberspace as a movement, it tries to avoid fixing, capturing and holding onto what is changing. In the encounter, connections occur and each dimension affects the other. To understand this process, this narrative tries to contribute to interconnections (Deleuze & Guattari 1988: 12–13) by looking at connections instead of locked definitions of dimensions. It moves in the direction of experimentation, in contact with what is real. It experiments with concepts and conceptions to understand what is real.

I do not claim to use Deleuze and Guattari's concepts exactly as they do. As Deleuze and Guattari write in their introductory chapter of *A Thousand Plateaus*, concepts are to be seen as lines, rather than points: '[t]hese words are concepts, but concepts are lines' (Deleuze & Guattari 1988: 22). They further write that, '[even] in the realm of theory, especially in the realm of theory, any precarious and pragmatic framework is better than tracing concepts, with their breaks and progress changing nothing' (Deleuze & Guattari 1988: 24). My goal is not to trace their concepts but instead to use them to understand the encounter between law and cyberspace. I want to let the concepts become in contact with this narrative rather than assume that they are.

I desire this not only for Deleuze and Guattari's concepts but for all relevant concepts, and I want to devote a few words here to some of the concepts that will become important for this narrative.

Cyberspace, a global virtual universe, in which people can interact with their content and each other (Cyberspace n.d). Cyberspace, a universe of information and culture, is being built on the Internet but it is building something more. As Lawrence Lessig points out in his book *Code and Other Laws of Cyberspace*, there seems to be an important difference between the Internet and cyberspace, in terms of experience (Lessig 2006: 9). Cyberspace is a place where people live and experience all sorts of things that they experience in real-space. Sometimes, in addition to this, they experience things that they do not experience in real-space. Furthermore, the narrative assumes that it is possible to distinguish between cyberspace and what has been called real-space.[3] This is by no means self-evident. Cyberspace and real-space meet, become entangled and can, in many ways, become one. For example, look at self-driving cars, cash registers, smartphones, and the phenomenon of swatting. However, this will not be part of this narrative.

Code is law. The concept 'code' can be used to denote many different concepts. It can mean language or a particular type of language. It can mean a system of symbols used to represent a message in a secret or shorter form. It can mean a collection of norms. It can mean a rule that determines how symbols can be replaced with other symbols, such as the Morse Code for Telegraphy or the ASCII Code for representation of letters and numbers in binary form. It can mean instructions written for computer programs. In this narrative, I use the term code largely in these last two senses. Of course, this does not exclude the other two meanings from the meaning of the concept in this narrative.

The concept 'human' also has different connotations. I here use the term to refer to the species *homo sapiens*. A species usually walking upright, having patchily hairy bodies, big toes that are not opposable to its other toes, s-shaped backbones and foreheads that are higher than its relatives, other apes (Human n.d.).

If that is a human, then what is a nonhuman and what can they do? In the economy of this article, the nonhuman can be understood as everything not encompassed by the above definition. Bruno Latour (1992) has proposed a model for understanding what nonhumans do. He describes an example that deals with the nonhuman door. He asks what work people would have to do if they had no door. The general model he presents reads: 'every time you want to know what a nonhuman does [what its role or function is], simply imagine what other humans or other nonhumans would have to do were this character not present' (Latour 1992: 155).

Furthermore, I am writing this narrative for it to be experienced. Deleuze emphasised that writing is not an

embellishment of the thoughts being conveyed, but that style itself evokes the form of thinking. Writing is not a representation outside of life. To write is therefore to produce, to become (Colebrook 2010: 77). My desire, as the narrator of this narrative, is to produce, to become. The way in which I write this text, in which I use the possibilities of language, is not an adornment but a conscious attempt to produce a certain form of thinking, both my own thinking and the thinking of you as a reader. An example of this is that every time I find that several words and/or concepts are relevant to carry all the nuances I find interesting for the production of a certain form of thinking I will write all the words and/or concepts, to give a more nuanced and defined experience.

What I have just told you may or may not have any major impact on the content of the narrative. I do hope, however, that you will carry it with you as you continue to read and experience.

The next line in the experience is reflecting on rhizomatic thinking and modalities that regulate human behaviour by reflecting on the law in contact with the Deleuzeoguattarian rhizome tool and then by thinking about different modalities that regulate human behaviour in contact with Lawrence Lessig's theory on code is law. Thereafter, the narrative will proceed to think about the encounter between law and cyberspace through lines of territorialisation, deterritorialisation and reterritorialisation, and then closing in on the encounter using the regulation of human cognition as an example. As an end in the middle that this narrative constitutes, these thoughts will be followed by my reflections on the future.

Rhizomatic Thinking

I have already written about differences: the difference between cyberspace and real-space, as well as the difference between cyberspace and the Internet. Another conversation about difference, central to this narrative, is the difference between law and non-law. This boundary is not as clear as it may initially be perceived. This narrative wants to encourage experimenting with and the questioning of ways of thinking that lead to law being seen as an isolated phenomenon with an outside where reality happens.

Operating the Deleuzeoguattarian rhizome tool, one can understand the different visible and invisible dimensions of law. Law does, therefore, become fluid, horizontal, and open-ended (see Bruncevic 2018: 27). It has no beginning and no end but always a middle. There are no points or positions but only lines (*see* Deleuze & Guattari 1988: 21). Law becomes an assemblage, a whole consisting of heterogeneous dimensions in symbiosis (*see* Deleuze & Guattari 1988: 249). The assemblage has no final goal and no order controlling the whole. What instead becomes decisive for the whole is created in interactions and connections (Colebrook 2010: xxvii).

In the assemblage, constant territorialisation is taking place. The territory of law is constantly changing/transforming. There are moments of change, moments of de/reterritorialisation. Lines of flight emerge, producing deterritorialisation. New territories are formed, reterritorialisation. How well defined does the identity of the assemblage become? How homogeneous does it become? How heterogeneous does it get? How fuzzy do the boundaries of the assemblage become? The more random connections the assemblage is in, the more deterritorialised it becomes. The orchid is deterritorialised as it forms an image of the wasp which is reterritorialised with the image. At the same time, the wasp is deterritorialised as it becomes part of the orchid's reproductive system and reterritorialises the orchid by transporting the orchid's pollen (see Bruncevic 2018: 24–25; DeLanda 2011: 37 & 42 min; Deleuze & Guattari 1988: 10, 53–54, 737–739, 508–510 & Plateau 3).

The process of transformation can be exemplified by the orchid and the wasp, the sun and the plant or EU law and its encounter with national sovereignty (Bruncevic 2018: 25; Colebrook 2010: xviii; Deleuze & Guattari 1988: 10). The sun meets the plant and creates photosynthesis (territorialisation). At the same time, the opportunity is also created for the plant to become something else (deterritorialisation). The sun's light can kill the plant, but it can also transform it into something else, such as sun-dried grapes becoming raisins or sun-dried leaves becoming tobacco (reterritorialisation) (Colebrook 2010: xviii). National sovereignty, the territory of law, was challenged by the emergence of EU law, which became a line of flight. The traditional legal physical territory and jurisdiction were challenged, and law deterritorialised. EU law became the new order, and the law was reterritorialised (Bruncevic 2018: 25).

The lines of territorialisation, deterritorialisation, and reterritorialisation become movements between dimensions. The movement when one dimension is drawn into the territory of another can be described as a movement of *becoming*. Becoming is not imitation but rather what is real. The orchid is becoming wasp and the wasp is becoming orchid (Deleuze & Guattari 1988: 10 & 237–239). The orchid's code creates value when it extracts parts of the wasp's code, to resemble the appearance of a female wasp, causing male wasps to land on it, and pass on its pollen (Deleuze & Guattari 1984: 39).

Modalities that Regulate Human Behaviour: Code is Law

In his book *Code and Other Laws of Cyberspace*, Lawrence Lessig (2006) presents four modalities that regulate human behaviour: law, social norms, the market and architecture. Lessig believes that the regulation of human behaviour can be seen as the sum of these four modalities. Changes in any one necessarily changes the whole (Lessig 2006: 122–124). Changes in law, for example, necessarily affect architecture, and changes in architecture necessarily affect law. He suggests that architecture in cyberspace is the modality that becomes most important for understanding the regulation of cyberspace (Lessig 2015: 05.00 min). Code becomes the architecture of cyberspace and regulates human behaviour by enabling certain behaviours and disabling other behaviours. *Code is law*.

Figure 1: Image depicting machine code that can be translated into the English words 'code is law.' Code and picture: Emmie Nordell. Reproduced with permission of the artist.

Ones and zeros. Binary code. Machine code. The language a processor can understand, but it is more than that. *Code is law.* Code regulates cyberspace and seems to be similar to other forms of regulation. Once again, I want to speak about differences and once again, I want to encourage experimenting with ways of thinking about boundaries. I want to speak about the difference between law in the sense of popular notions of what law is and can be, here called traditional law, and other wider notions of what law can be in a digital context, *code is law* and *law is code*. I want to encourage experimenting with the idea that this difference is a continuum rather than a boundary separating non-coherent phenomena.

However, a difference between code and regulation in the form of traditional legislation is that regulation in the form of code has a greater impact on what people can or cannot do, while traditional law rules rather stipulate what people should or should not do. (De Filippi & Samer 2017). Traditional legislation and social norms regulate *ex ante*, and are enforced through punishment. Architecture and the market are rather enforced at the same time as the behaviour (Lessig 2015: 3.00 min; Lessig 2006: 358). Another major difference is that natural languages used in traditional legislation typically become more flexible than program languages used in code (De Filippi & Samer 2017).

Even though these differences are important I, once again, want to point out that code regulates human behaviour in a similar way to traditional law. It enables certain behaviours and disables other behaviours. There is a continuity between these different forms of regulation. *Code is law.* To be able to think about this continuity I will reflect on the encounter between law and cyberspace.

The Encounter Between Law and Cyberspace

What would be the sound of the encounter between law and cyberspace? Who knows? Here is how I think. The way I play this sound is not an embellishment, but a conscious attempt to evoke a certain form of thinking. A certain form that I hope you, as a reader, will carry with you as you continue reading.

https://soundcloud.com/user-759402251-848934568/the-encounter-between-law-and-cyberspace

Territorialisation and Deterritorialisation

Cyberspace has been considered to be unregulated and perhaps even unregulable (Lessig 2006: 3). Does that mean that cyberspace is becoming a smooth place, a smooth space, a non-territorialised free space? I would like to suggest that cyberspace should not be seen as a smooth space. Code becomes architecture in cyberspace and regulates human behaviour. The architecture has consequences: it enables some human behaviours and makes others impossible. Code becomes rules that are like law. Code has gradually established its position as a dominant way of regulating human behaviour in cyberspace (De Filippi & Samer 2017: 1).

As John Perry Barlow, Internet philosopher and co-founder of the Electronic Frontier Foundation, puts it, in his *Declaration of the Independence of Cyberspace*:

> Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.
> ...
> Your legal concepts of property, expression, identity, movement, and context do not apply to us. They are all based on matter, and there is no matter here.
> – John Perry Barlow (1996)

Barlow addresses what he calls governments of the industrial world and tells them, '[y]ou have no sovereignty where we gather' (Barlow 1996). The law meets cyberspace (territorialisation). At the same time, the opportunity is also created for the law to become something else. At the same time as cyberspace becomes territorialised, the code in cyberspace challenges legal sovereignty. The emergence of cyberspace challenges the applicability and validity of legal concepts. Code regulates like law in cyberspace. *Code is law*. Code challenges the previous territorialisation of law, code becomes a deterritorialising force. Although cyberspace does not appear to be a smooth space, the emergence of code that regulates human behaviour seems to have become a line of flight: it deterritorialises law. The boundaries of law get fuzzy. The identity of law less well defined. The assemblage becomes more heterogenous (deterritorialisation). We must also not forget that, in the encounter, code is also deterritorialised. Law becoming code and code becoming law. Cyberspace can destroy law, but it can also transform it into something else, such as *code is law* or *law is code* (reterritorialisation).

Reterritorialisation: Code is Law or Law is Code

Law seems to be able to accommodate both deterritorialisation and reterritorialisation. Code regulates human behaviour. Law that regulates code is established. Law creates an image of code, is becoming code. Code enforces legal rules. Code is becoming a part of the legal system and is becoming law. At the same time, new technologies such as blockchain and machine learning enable the possibility for code not only to maintain and enforce legal rules but also to draft and develop such rules (De Filippi & Samer 2016). *Code is law*, but maybe law can now also become code. The new order could be either *code is law* or *law is code* or both. Reterritorialisation can take place through *code is law* as well as through *law is code*.

In his *Declaration*, Barlow (1996) stated that there is no matter in cyberspace (maybe that is the case, maybe not) and that therefore, legal concepts cannot be applied there. However, these legal concepts and how they can be applied do not depend on whether we exist in matter or not but instead on architecture. At the time, for Barlow's formulation of the declaration, the architecture of cyberspace was an architecture of freedom. This has changed, and today it can be described as an architecture of control (Lessig 2015: 11.00 min f; Lessig 2000). Code regulates cyberspace and code changes/transforms cyberspace from being a space where anonymity, freedom of speech and individual control have been protected towards a space where anonymity becomes more difficult, freedom of speech less free, and individual control only allocated to individual experts (Lessig 2000). The ability for states, as traditional legislators, to regulate the human behaviour that occurs in cyberspace can and has changed (Lessig 2015: 11.00 min; Lessig 2006: 61 f.). The architecture has changed and thus, so has the answer to the question regarding the applicability of legal concepts. Code, the architecture of cyberspace, seems to be more suited to becoming law than other forms of architecture. Code is drawn into the territory of law. Code is becoming law. Code is deterritorialised as it becomes part of the system of law and reterritorialises law by enforcing legal rules.

We seem to rely more and more on technology/code, the architecture of cyberspace, to enforce legal rules. Code can certainly enforce rules very effectively, but it also entails certain limitations, mainly based on the difficulty of translating the ambiguity and flexibility of traditional rules of law into code (De Filippi & Samer 2016: 1). In fact, what may seem like imperfections in law are not so imperfect at all. Instead, ambiguities in law and agreements can be well-balanced dimensions of the systems (Lessig 2015: 23.00 min). Thus, while opportunities for traditional law to regulate people's behaviour in cyberspace are increasing, there are still challenges with regulation through code.

However, as new technologies such as machine learning and blockchain technology become part of this narrative of law and cyberspace, some of the limitations that have traditionally been associated with regulation through code have changed. Machine learning systems are governed by formalised code-based rules but do allow such rules to become dynamic and adaptive. This can make them more similar to traditional legal rules that are expressed in natural languages. Machine learning means that systems can learn from data that is collected or presented. This new technology, therefore, enables constant development of rules, adapting them to the specific context in which they are applied. However, it is worth noting that machine learning has been shown to contain bias and discrimination as well as a tendency to undermine values of universality and equality before the law (De Filippi & Samer 2017). Blockchain technology has, among other things, enabled so-called smart contracts, which can increase the applicability of regulation through code. This is because this technology can make it possible to formalise legal and/or contractual provisions in smart contracts, that can give rise to new code-based rules which are, moreover, enforced automatically (De Filippi & Samer 2017).

These technologies allow code not only to be used to enforce legal rules but also to define, design and develop law (De Filippi & Samer 2016: 14). Thus, it seems likely that law can become defined as code. Law is deterritorialised as it becomes a part of the architecture of cyberspace, but it reterritorialises the architecture of cyberspace by defining, designing and developing *law (is code)*. When we rely more and more on code to enforce legal rules, legal rules may, furthermore, begin to become more and more formalised to fit the technology that will enforce them (De Filippi & Samer 2016: 14). Law can begin to take the form of code. It seems likely that law can reterritorialise via *code is law* and/or *law is code*. However, reterritorialiaation via *code is law* or *law is code* has different effects/ consequences/ outcomes. What do the two different lines do/perform/ produce?

Reterritorialisation via *code is law* can entail insight into and realisation of code having effects similar to the effects of traditional law, and that law can be maintained and enforced through code. This means that code is still seen as something on the outside of law. Since code has effects similar to those of traditional law, this means that a modality of regulation that affects human behaviour in a way similar to the way traditional law affects human behaviour is not treated in a similar way.

As cyberspace evolves, it is important to understand that there are choices that must be made and that will affect what values are built into cyberspace. The question is not whether the choices will be made – because they must be – but instead by whom. There is still an opportunity to imagine a world where we can make these choices collectively and responsibly. Unless these choices are made consciously, they will be made without us having the institutions or training to evaluate and change them (see Lessig 2006: 311, 313).

Furthermore, values, exceptions, limitations and latent ambiguities which aim to strike a balance in regulation, are embedded in law. Whether these will be reflected in code that regulates is less certain (see Lessig 2006: 185–186). Cyberspace and new technologies have given rise to new situations people may find themselves in. Former architectures have protected and regulated some human behaviour which is now threatened by the new architecture in cyberspace. We therefore have to ask whether rights

that have been granted to humans by former architecture should be legally protected in this new context. We have to ask whether the degree of relevance of traditional law, in relation to other modalities of regulation, has changed (see Lessig 2006: 191–192). When code regulates, how can we question the regulation?

Lessig suggests that it is important to question/interrogate the architecture and the code of cyberspace in the same way that it is important to question/interrogate the law/code established by traditional legislators. He points out that this is important for preserving a constitutional tradition that is committed to protecting fundamental values. There is a risk that people may lose their role in shaping the law if law in cyberspace, *code is law,* will be, become and evolve in the way that cyberspace encodes it (Lessig 2000). If code becomes law, who becomes lawmaker? Who establishes the law that governs our behaviour? What role do we as human beings/the people have in the creation and development of this regulation? What right do we have to gain/acquire knowledge about the regulation? How can we evaluate and influence it? If code becomes law and if law becomes code, should not the processes of code writing embrace values from legislative processes (see Lessig 2006: 323, 328)?

In a world where the state as a traditional legislator becomes the one that, to a great extent, regulates, it becomes reasonable that regulation via the state becomes the modality of regulation which is proceeding from the people. But in a world where code rules at least as much, there is no reason to ignore that even if this form of regulation should proceed from the people.

In such a world, code as architecture becomes a sovereign that governs the people living in cyberspace (Lessig 2006: 293).

In real-space, by democratic states, the sovereign is considered legitimate only if they are democratically elected. The main principle is that all power proceeds from the people. However, irrespective of the degree to which it pertains in real-space, democracy does not seem to prevail in cyberspace or on the Internet. Instead, democracy seems to be the exception to a general principle that states that the owner of a certain site is the sovereign in that part of cyberspace. Of course, this does not mean that collective opinions do not mean anything in cyberspace. There are plenty of examples of places where voting and/or ranking systems are used to influence the content of that particular space. These processes can be described as democracy-like, but since democracy means that the rules that govern people proceed from the people, they do not make cyberspace a democracy (Lessig 2006: 285).

In democratic governance, the people's power over political decision making is considered absolutely necessary (Demokrati n.d). In Sweden, as an example of a state with democratic governance, it is stated in the constitution that all public power proceeds from the people and that public power is exercised under the law. It is further stipulated that laws are passed by the Riksdag and that the Riksdag is appointed through free, secret and direct elections, in which all Swedish citizens who have reached the age of 18 and who are or have been domiciled in Sweden have the right to vote. Those who have the right to vote also have the right to stand for election and to be elected members of the Riksdag. Laws may also not be amended or abrogated in any other way than by another act of law (Kungörelse 1947: 152). Laws are established, changed and abolished democratically. In a democracy, there is an expectation that the power to pass, amend or abrogate law should be dispensed among the people by the people.

In a scenario where code with effects similar to the effects of traditional law is not treated as law, the realisation of this important principle can be called into question. Can all power be considered to proceed from the people if code, which has effects similar to the effects of traditional law, does not proceed from the people? When the power to establish, change and abolish code is not dispensed among the people by the people. When the 'parliament' of code is not appointed through free, secret and direct elections. Can code then be considered legitimate? Even if there certainly are democratic problems and problems with democracy in real-space there seems to be an evident desire to let power proceed from the people. If this desire is not present in cyberspace, can code be considered legitimate? What do the lines of reterritorialisation do with the people, the role of the people, democracy and legitimacy?

Reterritorialisation via *law is code* offers insight into and realisation of code as defining, designing and developing law. Law is becoming code. *Law is code*. In a scenario where law is defined as code, a scenario in which code can be treated as law is enabled. The realisation of the principle of popular sovereignty becomes possible. Code may be granted/given legitimacy.

However, *law is code* entails some compromises. Democratic opportunities arise through cyberspace since it opens up to allow code writing to proceed from the people, at the same time as anyone can realise, develop and spread techno-legal frameworks. Technologies in cyberspace can offer decentralised and trust-less systems that can lead to the development of democratic governance. In the encounter with today's economic and political order, this does entail a risk of non-flexible governmentality. *Law is code* can, therefore, either realise a scenario of a utopia/a crypto-libertarian dream or a dystopia/a society with a strong, albeit decentralised, panopticon (De Filippi & Samer 2016: 19). *Law is code* can produce diverse effects and I suggest that this is a reason for society, the people and the legal community to take code and its effects seriously and make sure that it is legitimate in a democratic society.

Since code acts/functions as law, we are now in the process of creating a very significant new jurisdiction (see Lessig 2006: 318). It may seem difficult to determine where human beings are located when they are in cyberspace. It may be tempting to try to determine if they are in cyberspace or in real-space so that it can be determined which of the spaces that have jurisdiction over them. Frustratingly enough, the answer is that they are both in real-space and in cyberspace. Both the rules

in real-space and the rules in cyberspace must therefore apply (see Lessig 2006: 298). Therefore, the general rule seems to be that human behaviour is regulated by several jurisdictions (see Lessig 2006: 300). We must, therefore, also begin to understand how the multiplicity of jurisdictions can work together when the human being is in multiple jurisdictions at the same time.

Perhaps law can reterritorialise both through *code is law* and *law is code*. Maybe further technological development is needed. Perhaps this would be good in order to preserve the ambiguity of the law and the possibility for the law to give preference to the public good rather than, for example, individual contracts (see *Campbell Soup Co. v. Wentz*; Lessig 2015: 37.00 min). Perhaps this would be good in order to preserve the sovereignty of the people.

Regulation of Human Cognition as an Example

> 'We shape our tools, and thereafter our tools shape us'. (Culkin 1967: 70)
>
> 'We build this nature, then we are constrained by this nature we have built.' (Lessig 2006: 339)

One of the big issues regarding the encounter between law and cyberspace is the question of privacy. Two examples of threats to privacy are the threat of digital surveillance, and the threat of increasing data collection by private operators. This data is not primarily collected for purpose of surveillance but instead to promote trade (Lessig 2006: 223). This is done in a variety of ways, of which targeted ads are one. The architecture of cyberspace can be considered to enable commodification of human attention, cognitive abilities and cognition in various ways (see Kinsley & Crogan 2012: 1, 4, 7 and **Figure 1**). I argue that it is not only the 'pure' value of privacy that is threatened in this context, but rather human cognition itself.

The Encounter Between Law and Code that Personalises Information

The Internet and cyberspace are becoming richer and richer in information and have reached a stage where it has become impossible for a human being to sort through this amount of data (Krafft, Gamer & Zweig 2018). An abundance of information causes human attention to become a scarce commodity (see Kinsley & Crogan 2012: 4). In an attempt to make this amount of information manageable, cyberspace actors have written code that filters information in a personalised way (see e.g. Google 2012; Google n.d.). What does this code do? Artificial intelligence in algorithms filters the flow of information that reaches every human being in cyberspace. Bruno Latour's model for understanding what nonhumans do becomes useful for understanding what the current code does in relation to human cognition. To understand what the nonhuman, the code, does, we can imagine what other humans or nonhumans would need to do if the code did not exist. If personalising algorithms were not present, humans or other nonhumans would have to sort through massive amounts of information to find and determine what is relevant to the specific situation that the human being is in and for the decisions and cognitive processes they are facing. In other words, personalising algorithms sort through vast amounts of information (in cyberspace) and determine what information is relevant to the specific person, the specific situation, and the specific decisions and cognitive processes that are at hand (Nordell 2019: 23; Latour 1992: 155).

Human cognition can be described as '[t]he mental activities involved in acquiring and processing information' (Cognition n.d.). Since personalisation algorithms determine what information is relevant to the specific person and situation, and the specific decisions and cognitive processes they involve, and if human cognition consists of collecting and processing information, one can see how these codes affect human cognitive processes. The cognitive processes are based on the information they encounter, which means that when the code determines what information is presented to the human being, certain cognitive processes are made possible and certain others are made impossible. Therefore, it becomes clear that personalizing algorithms affect human cognitive processes. Code enables certain cognitive processes and disables certain others. Code regulates human cognition. Cyberspace is not a non-territorialised, smooth space. As the architecture changes, the regulation of human behaviour is transformed. Just as EU law challenged national sovereignty, code now challenges legal sovereignty in the encounter between law and code governing human cognition. Law is deterritorialised. Code is deterritorialised.

Due to changes in the architecture, new opportunities to regulate human cognition by enabling certain cognitive processes and disabling others now exist. Human cognition is now becoming regulated by code. As more and more of human life takes place in cyberspace, our lives and cognition are increasingly regulated by code.

Human cognition has not been explicitly regulated by traditional law to any larger extent. Fundamental human rights protect, for example, freedom of thought, but this and other similar rights seem to protect *what* we think rather than *how* we think (Nordell 2019).[4] However, in this context, it becomes relevant to ask why human cognition has not previously been explicitly protected by traditional law? When this question is asked it becomes important to point out that, just because traditional law does not protect human cognition, it does not mean that cognition is not protected. Perhaps human cognition is seen to be protected by architecture. A different architecture entails a different regulation of human behaviour. Perhaps human cognition is sufficiently protected in real-space, but the new architecture entails that it is not effectively protected in cyberspace. Another question which becomes relevant is whether it is possible to regulate the protection of human cognition in cyberspace to the same degree as in real-space? Can we translate values from regulation before code to regulation after code?

Of course, humans filter information all the time, and there is an intrinsic value in this. However, since human cognition is believed to have evolved as a way of controlling action and the methods of filtering via

personalising algorithms are largely unknown to humans, it is now difficult for humans to determine whether the filtered information is an appropriate basis for action or not. People are therefore susceptible to unfavourable filtering of information that is becoming the basis of cognitive processes (see Glass 2016: 2; Noorman 2018; Nordell 2019: 28; Cf. Pariser 2011: 9–10). It can, therefore, be assumed that it is appropriate for humans to choose filters themselves, rather than have others choose filters for them. Furthermore, there is a value in meeting the unfiltered. In real-space, filtering is usually far from perfect. There are people who live perfectly filtered lives in real-space, but most of us do not. For example, being exposed to what is not filtered gives us the opportunity to better understand and to be able to take into account problems which affect others, since we can then gain insight into problems that others are forced to face (Lessig 2006: 259). Perhaps, the new architecture, therefore, creates the need for protection of human cognition.

The mix of modalities of regulation becomes what regulates human behaviour, but it also becomes that which protects rights granted to humans. The mix can, therefore, act as a regulation of human behaviour as well as protection against other regulations of human behaviour (Lessig 2006: 233).

Reterritorialisation – Code is Law or Law is Code

What do processes of reterritorialisation do with the regulation of human behaviour? What do they do with the regulation of human cognition through personalising algorithms?

Reterritorialisation via *code is law* can entail the understanding and realisation that code which personalises information and that regulates human behaviour has effects similar to the effects of traditional law and that law can be enforced through this code. However, this code is still seen as something outside the law. This modality of regulation, which has effects similar to those of traditional law, is not treated in a similar way. The regulation of these cognitive processes does not proceed from the people and the legitimacy of the regulation can, therefore, be called into question. If this code becomes law, who will establish this law? What right do we, the people, have to gain knowledge of the code that governs our cognition? How do we evaluate and influence/transform this regulation?

There are choices to be made regarding the development of this code, that will affect which values are built into the regulation of human cognition in cyberspace. The question is not whether these choices will be made but instead who will make them. Can we make these choices collectively and responsibly?

There are values embedded in the mix of modalities that formerly regulated human cognition. What are these values? The fact that there now seems to exist new possibilities to influence human cognition makes it difficult to determine what the former absence of explicit protection of human cognition depends on. Whether the absence was due to the fact that human cognition was not considered worthy of protection, or that it was not threatened and so did not need protection (perhaps because it was protected by, for example, architecture). Since it is not possible to determine which of these explanations is true, it is not sustainable to argue that human cognition should not be protected, on the basis that it has not explicitly been considered worthy of protection. Thus, the design of traditional legislation cannot be relied upon when deciding which values should be built into the new architecture. Choices have to be made. What values should be embedded in the new architecture? Who will make these decisions? When code governs human cognition, there is no reason to deny that this form of regulation should proceed from the people.

Reterritorialisation via *law is code* enables code to be treated as law. Code that regulates human behaviour in personalising algorithms may proceed from the people and become legitimate.

In the process of reterritorialisation, traditional law can regulate code to stop a movement/transformation/becoming into a new space or we can find ways that can unite cyberspace with values which, for the people, are fundamental. It can be values, such as equality, solidarity, justice, and/or dignity. For example, there may be a desire for human cognition to be protected in cyberspace. There may be a desire that certain things, such as human attention and certain cognitive abilities, should not be able/be permitted to be for sale (see Ertman & Williams 2005: 1). The question then becomes; what can make cyberspace build an architecture that makes such a scenario possible? Perhaps collective action is needed to guide the evolution of the architecture of cyberspace in this direction.

In Christopher Nolan's movie *Inception* (2010), Dom Cobb says, '*You taught me to navigate people's minds. But after what happened, there weren't a whole lot of legitimate ways for me to use that skill.'* He may not have seen any legitimate ways to use the skill he had learned to navigate people's minds, but I suggest that we should and must find a legitimate way to use the skill to navigate people's minds that we have learned.

The Future

Principles used in developing and changing/transforming traditional legislation may possibly be used in developing and changing/transforming code. Law is established, changed, and abolished democratically. If law is code, perhaps writing code, changing code and erasing code may also proceed from the people. Of course, this does not mean that parliaments (or their equivalents) should be involved in writing, changing and deleting all code. However, it could mean that the people can be represented in these processes in other ways. It could mean that an encounter between these processes and the people can be created. An initial question for the people, in such an encounter, should be regarding which values should be embedded in and protected in cyberspace.

Lessig advocates a quest for balance between all four modalities of regulation and the idea that changes in traditional law as well as to code may be needed (see Lessig 2006: e.g. 123 ff.). Based on the reasoning that *law, is code*, should proceed from the people, I also/rather want to suggest that we (whether that is we the society,

we the people or we the legal community) should actually take into account that *law is/can become code*. If we henceforth desire democratic systems, we need a desire for the creation and transformation of code to proceed from the people. The democratic notion of the sources of legitimacy can in many ways be considered problematic. What does it mean to proceed? To what degree should this proceeding be representative? Just as democratic systems have problematic aspects in relation to the power to pass, amend or abrogate law they would have problematic aspects in relation to the power to develop, change or delete code. There is continuity, not only in respect to the effects of traditional law and code but also in respect of problematic aspects of democratic ideals.

Some of these aspects should be thought about in light of technological development. Could technology, for example, create new solutions and/or alternative answers to the question of how representative a democracy should be? Perhaps technological development and *law is code* could solve the problem of trust regarding power and law. The endeavour to place the state, as a traditional legislator and representative of the people at the centre, is based on a desire for a system in which trust in the state replaces the need for trust between people. Blockchain technology can and has been considered to solve the problem of a need for trust for a centralised actor, regarding digital payment (Nakamoto 2008). Perhaps the problem with a need for trust regarding political and legal power can also be solved by technology. By technology and *law is code*.

Law is code requires new considerations regarding the law. Code can be considered an effective way to enforce law or to define, draft and develop law. It can make the law more effective, which can have consequences. The way the law is designed is based on the degree of efficiency that the architecture allows. What happens if this degree changes? What new considerations need to be made? What would this do to/with the people, democracy, and legitimacy? Law becoming code and code becoming law. How do we then build a system in which code that regulates human behaviour proceeds from the people?

By thinking about the encounter between law and cyberspace in contact with processes of de/reterritorialisation we can understand this encounter as a movement/continuum. A continuum in which we, perhaps, can think about possibilities as opportunities. Of course, it hurts when the *law* bud bursts. When it encounters the new cyberspace and grows. But that only means that we should reflect on and act responsibly in this encounter that we are part of. We should think about possibilities for code to proceed from the people that are made possible by new technologies. *Law* can become *code* – and we should act as if it can.

Notes

[1] Translation from Swedish to English by the author of this article.

[2] I use the word 'proceed' because it is used in the English translation of the Swedish Instrument of Government, which I use as an example of an instrument of a democratic state. It is used in the context '[a]ll public power in Sweden proceeds from the people' (The Instrument of Government: *Kungörelse* (1974:152) *om beslutad ny regeringsform*. 1:1). Further, I am using the word in the sense of 'continue' rather than 'emanate'. I do not, therefore, claim that power can emanate from the people/derive from the people in some tree-like structural sense, but rather that it may proceed from the people as a middle through which the rhizome protrudes and overflows, through which it grows and overspills. (see Deleuze & Guattari 1988: 23). The middle depends on how we tell the narrative, but the narrative does matter. Perhaps an encounter between the processes of writing code, changing code and erasing code, and the people can become in a narrative that we can tell.

[3] I have chosen to use the term 'real-space' to describe the space in which people usually live and move when they are not living and moving in cyberspace. This is a term that, for example, is used by Lawrence Lessig. My choice is made in the absence of imagination and better alternatives, and I, therefore, leave it up to the future to extract a concept that can more aptly term the space referred to here. I would, however, like to point out that I do not wish to describe any of the relevant spaces as more real than the other.

[4] Furthermore, regulation of marketing could perhaps, to some extent, be considered to protect human cognition.

Acknowledgement

On page 1: Sketch/outline of code affecting human beings: Adam Ståhl. Reproduced with permission of the artist.

Competing Interests

The author has no competing interests to declare.

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