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Cloud Communities: The Dawn of Global Citizenship?

Edited by Liav Orgad and Rainer Bauböck

European University Institute

Robert Schuman Centre for Advanced Studies

Global Governance Programme

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Abstract

New digital technologies are rapidly changing the global economy and have connected billions of people in deterritoralised social network. Will they also create new opportunities for global citizenship and alternatives to state-based political communities? In his kick-off essay, Liav Orgad takes an optimistic view. Blockchain technology permits to give every human being a unique legal persona and allows individuals to associate in 'cloud communities' that may take on several functions of territorial states. 14 commentators discuss this vision. Sceptics assume that states or business corporations have always found ways to capture and use new technologies for their purposes. They emphasise that the political functions of states, including their task to protect human rights, require territorial monopolies of legitimate coercion that cannot be provided by cloud communities. Others point out that individuals would sort themselves out into cloud communities that are internally homogenous which risks to deepen political cleavages within territorial societies. Finally, some authors are concerned that digital political communities will enhance global social inequalities through excluding from access those who are already worse off in the birthright lottery of territorial citizenship. Optimists see instead the great potential of blockchain technology to overcome exclusion and marginalisation based on statelessness or sheer lack of civil registries; they regard it as a tool for enhancing individual freedom, since people are self-sovereign in controlling their personal data; and they emphasise the possibilities for emancipatory movements to mobilise for global justice across territorial borders or to create their own internally democratic political utopias. In the boldest vision, the deficits of cloud communities as voluntary political associations with limited scope of power could be overcome in a global cryptodemocracy that lets all individuals participate on a one-person-one-vote basis in global political decisions.

Keywords

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Cloud Communities: The Dawn of Global Citizenship?

Liav Orgad[*1]

The idea of global citizenship

About 70 years ago, an American peace activist named Garry Davis created a registered concept of 'world citizenship.' A naïve enterprise at its infancy, this concept looks more realistic today for three reasons. The first reason is *global interconnectedness*. The internet has profoundly changed the notion of public space. About 50 per cent of the world population uses the internet and global internet use is consistently growing – from 16 per cent in 2005 to 48 per cent in 2017. 71 per cent of the world's youth population (15-24) uses the internet, 94 per cent in the developed world.[2] 2.3 billion people use smartphones, almost one-third of the global population. Facebook and WeChat in China have an estimated 3 billion users together. Internet technologies and cloud computing enable people to establish digital IDs, which could eventually become recognised as an international legal personality, be connected with one another, disentangled from physical borders, and act at a distance.

The second reason is *identity*. Ever since Aristotle, membership in a political community denotes an identity of some kind. Shared identity is a cornerstone of citizenship – it creates a sense of community and a commitment toward a common good.[3] While the idea of global citizenship goes back to ancient Greece – the Greek philosopher Diogenes is credited to be the first to define himself as 'a citizen of the world'[4] – it is only in recent years that a transformation of consciousness from local to global identities has been identified. Recent polls reveal that people are increasingly identifying themselves as global, rather than national, citizens. For example, a 2016 BBC World Poll shows that 56 per cent of the respondents consider themselves, first and foremost, as 'global citizens,' rather than national citizens.[5] A 2016 World Economic Forum Survey indicates that the vast majority of young people identify themselves first as 'human' (40.8 per cent) and 'citizens of the world' (18.6 per cent), while national identity only comes third (13 per cent).[6] National identity remains central, but, particularly in emerging economies, a perception of global social identity is on the rise.[7] For the first time in history, a large percentage of the world's population places global identity above any national or local identities; there is a growing sense of a global community that transcends national borders.

The third reason is *responsibility*, a central component of a republican conception of citizenship. In a republican view, members of a political community share public responsibilities to promote a common good and confront common challenges. Today, more than ever, human beings face common

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[2] International Telecommunications Union (2017), *ITU Facts and Figures.* Geneva: International Telecommunications Union, available at https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf

[3] Joppke, C. (2010), *Citizenship and Immigration*. Cambridge: Polity Press.

[4] Nussbaum, C. M. (1994), 'Patriotism and cosmopolitanism', *The Boston Review*.

[5] GlobeScan (2016), *Global Citizenship a Growing Sentiment Among Citizens of Emerging Economies: Global Poll.* Available at https://www.globescan.com/news-and-analysis/press-releases/press-releases-2016/383-global-citizenship-a-growing-sentiment-among-citizens-of-emerging-economies-global-poll.html

[6] World Economic Forum (2017), *Global Shapers Annual Survey 2017*. Available at http://www.shaperssurvey2017.org/static/data/WEF_GSC_Annual_Survey_2017.pdf; World Economic Forum (2016) *Global Shapers Annual Survey 2016*. Available at http://www.shaperssurvey2017.org/static/data/GSC_AS16_Report.pdf

[7] Buchan, N., M. B. Brewer, G. Grimalda, R. K. Wilson, E. Fatas & M. Foddy (2011), 'Global social identity and global cooperation', *Psychological Science* 22 (6): 821-828.

global challenges and human activities have a cumulative effect on the global scale.[8] Although there are no global individual responsibilities, at least not in the legal sense, private individuals are increasingly showing global responsibility in different policy areas (food consumption, global warming, animal rights) by taking actions (e.g., buying organic food, recycling, becoming a vegetarian) based on free choice and without state coercion. Some of the global challenges have become urgent and cannot be adequately addressed on the national level. By showing global responsibility, even if limited and with a weak sense of agency, individuals are participating in activities whose scope and target audience go beyond national boundaries. The changing public opinion thus goes hand in hand with changes in individual actions motivated by a sense of global political responsibilities.

Status: international legal persona

Under the current structure of international law, individuals exist as legal persons only through a status conferred to them by a state. Individuals are citizens or residents of some state; an international legal status of a 'human being' is non-existent.[9] True, international law speaks in universal terms of international *human* rights law, even *natural* rights, but it makes them largely dependent on citizenship and territorial sovereignty, as if a person only legally exists through a state – a feudalist approach.[10] This state of affairs raises three issues. First, *human rights*: an estimate of 1.1 billion people, 15 per cent of the world population, lacks an official identification.[11] Without a national identification, one cannot have access to basic services and participate in modern life; one lacks, as coined by Hannah Arendt, the 'right to have rights'. For refugees and displaced persons, having no national identity can lead to detention and deportation. But even people with a national ID may wish to have a universal ID that allows them to choose an identity free of state limitations (think of national restrictions on gender identity, sexual orientation, and names). The legal source for an international legal personality can be found in Article 6 of the Universal Declaration of Human Rights, according to which 'Everyone has the right to recognition everywhere as a person before the law' (also Article 16, ICCPR).[12]

The second issue is lack of *self-governance*. Existing citizenship regimes are based on Westphalian sovereignty under which citizens govern their life indirectly – through the state.[13] This means that the status of citizenship perpetuates the monopoly of the state to control the exercise of individual rights. On the national level, the exercise of rights is connected with the status of citizenship (though less today than in the past);[14] on the transnational level, following the development of a standard travel document, the passport, the exercise of freedom of movement outside the state has become connected with citizenship (perhaps more so today than in the 18th and 19th centuries).[15] It also means that the

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[8] Dower, N. (2003), 'Does Global Citizenship Require Modern Technology?' *Ideas Valores* 52 (123): 25-42.

[9] It has a few exceptions: individual criminal responsibility and some civil liabilities in international law.

[10] Benhabib, S. (2005), 'Borders, Boundaries, and Citizenship', *Political Science and Politics* 38 (4): 673-677.

[11] Desai, V., M. Witt, K. Chandra & J. Marskell (2017), 'Counting the uncounted: 1.1 billion people without IDs', *The World Bank*. Available at http://blogs.worldbank.org/ic4d/counting-uncounted-11-billion-people-without-ids

[12] United Nations (1948), *Universal Declaration of Human Rights*. Available at http://www.un.org/en/universal-declaration-human-rights/; Also: United Nations (1966), *International Covenant on Civil and Political Rights. Adopted by the General Assembly of the United Nations on 19 December 1966*, available at https://treaties.un.org/doc/publication/unts/volume%20999/volume-999-i-14668-english.pdf

[13] Peters, A. (2016), Beyond human rights: the legal status of the individual in international law. New York: Cambridge University Press (Huston J. tran.).

[14] Spiro, P. (2008), Beyond Citizenship: American Identity After Globalization. New York: Oxford University Press.

[15] Dehm, S. (2018), 'The Passport', in Hohmann J. & D. Joyce (eds.), *The Objects of International Law*. Oxford: Oxford University Press (forthcoming).

participation of individuals in international law-making, even in decisions that directly affect them, is only realised through state representatives and depends a great deal on who is included in the boundaries of the demos. Minorities that have minimal political influence or no citizenship rights remain unheard in international decision-making, and so are people who are ineligible to vote in national elections due to electoral law restrictions and citizens in authoritarian regimes.[16] The actual influence of individuals in the creation of international law is infinitesimally small.

The third issue is *unequal representation*. Since the 17th century, the Westphalian concept of sovereignty has been based upon two fundamental ideas that have marched together – nation-states and territories – accompanied by a third idea, equality: the notion that sovereign states are equal.[17] The Peace of Westphalia ended the medieval hierarchical system of power among rulers – though not among humans – and replaced it with a system of territorial sovereignty and sovereign equality of states (this idea is recognised today in Article 2(1) to the UN Charter).[18] Unlike sovereign states, individuals do not have an equal voice in international affairs. International law is organised on a 'one-state, one-vote' basis – a system that creates disparities in individual voting power. Citizens of San Marino (33,000 people) have the same voting power in the UN as citizens of India (1.2 billion). The disparity in individual voting power in governance of global issues (e.g., global warming and the environment) undermines the equal value of citizenship under international law.

Digital identity: blockchain technology

The UN Sustainable Development Goals recognise the importance of legal identity for all. Article 16.9 aims to 'provide legal identity for all, including birth registration' by 2030. Through the ID4D program, the World Bank assists in the promotion of the UN goal by financially assisting states to provide recognised IDs.[19]

The internet already offers the infrastructure for the realisation of digital IDs, yet new technologies, e.g. blockchain, are likely to bring further improvements necessary to turn the idea into reality. The internet is a system of interconnected computer networks, which allows for exchange and transfer of data. All present major internet applications are structured in a client-server application, where the participants access it via an app or a web browser (client) and the company providing the application runs the computations and data on their own computers (server). This structure gives these companies (and governments) total control over the service they provide and all the data produced by its users. Blockchain technology offers the first internet applications that works differently; it is designed as a peer-to-peer system that is not controlled by a central entity and in which data exchange is not stored in a single physical location. On the blockchain, shared data are hosted by all the computers in the network simultaneously and are publicly accessible to all. Blockchain technology is a game changer; it can provide people with *self-sovereign identity* – they are the ones who create and register their identity and they are the only ones who control what to do with it and with whom to share what. In such a decentralised system, one's identity is not owned by a central server (Facebook, LinkedIn, a state ministry), but by the person herself; she can decide which data to share and for what purpose. Hence, blockchain technologies can help achieving the UN goal of granting an ID to everyone, not just

[16] Shaw, J. (2017), 'Citizenship and the Franchise', in Shachar A., R. Bauböck, I. Bloemraad & M. Vink (eds.), *The Oxford Handbook of Citizenship*, 290-313. Oxford: Oxford University Press.

[17] Walker, N. (2017), 'The Place of Territory in Citizenship' in A. Shachar, R. Bauböck, I. Bloemraad & M. Vink (eds.), *The Oxford Handbook of Citizenship*, 553-575. Oxford: Oxford University Press.

[18] United Nations (1945), *Charter of the United Nations*. Available at http://www.un.org/en/sections/un-charter/chapter-i/index.html

[19] Above n.11

to those who can obtain it from a state, in a decentralised way that is not necessarily controlled by the UN or by states.

Several organisations are currently working on the creation of the technological infrastructure required for a trustworthy global digital ID.[20] The achievement of this goal involves some challenges: who will register people for a global ID? What will be the relation between a global ID and a national ID – will the global ID rely on national registries or be independent? When will a global ID be created – at birth, or at later age when the person can exercise control? Which details will be included – only a birth certificate, or also physical characteristics and biometric data? Will there be a standard form? Will the possession of a global ID be a right, or also a duty? How to create digital IDs for people in places where the required technology does not exist or in authoritarian regimes that restrict their subjects' access to information technology? How to create an ID that is immune to identity theft and fake identities? These are important questions, but the very idea of a global digital identity for everyone, giving all people a legal status as a 'human being,' is no longer a far-fetched possibility.

A global ID is not a status of citizenship – nor does it create, in and of itself, an international legal status, although it is a prerequisite for it. Yet, in my view, this is not supposed to be its main purpose. An international legal persona should not be seen as a replacement of national citizenships but rather as a status and identity *complementary* to national citizenships (it is thus not identical to cosmopolitan visions of global citizenship)[21]. It is a legal concept that will provide everyone with a global unique ID of a 'human being.' This status will be the *default* lifelong identity and membership for *every* person, which cannot be waived or withdrawn, and on top of it individuals will have other forms of membership, such as national citizenship.[22]

Political participation: 'Cloud Communities'

Imagine that every person has a trustworthy unique international legal persona; what are we going to do with it? The range of applications is enormous. The question is not only which functions are technologically possible, but which ones are normatively desirable, i.e., which values should be achieved by using technology?

In international law, a 'state' possesses four qualities: a permanent population, a defined territory, government, and a capacity to enter into relations with other states (Article 1, Montevideo Convention, 1933)[23]. International law does not recognise the concept of a 'virtual state,' yet existing virtual communities, such as Bitnation (https://bitnation.co/) – a decentralised borderless virtual nation that functions as a government service platform – challenge the definition of a 'state,' and raise the question of why some of the institutional functions of the state, for which it was first established, cannot be effectively served also by a virtual political community?[24] Can we interpret a 'defined territory' to include cyberspace, or instead talk of 'state-like' non-territorial polities?

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[20] E.g., ID2020; uPort; Accenture Unique Identity Service Platform; BITNATION; Democracy Earth Foundation, Jolocom, Evernym, Decentralized Identity Foundation.

[21] See discussions in: Shachar, A. (2009), *The Birthright Lottery: Citizenship and Global Inequality*. Cambridge: Harvard University Press, 45-48.

[22] My focus is on a formal legal institution – status – and the political deliberation that can follow it. Other issues that may be associated with an international legal status – e.g., rights (think of global basic income), duties (think of global tax system), or identity (think of global core curriculum) – require a different discussion.

[23] *Convention signed at Montevideo December 26, 1933*. Available at http://avalon.law.yale.edu/20th_century/intam03.asp

[24] Tarkowski Tempelhof, S., E. Teissonniere, J. Fennell Tempelhof & D. Edwards (2017), *Bitnation, Pangea* Jurisdiction *and Pangea Arbitration Token (PAT): The Internet of Sovereignty*. Planet Earth: Bitnation.

The concept of an international legal persona will enable individuals to establish 'Cloud Communities' of different kinds. Conceptually, cloud communities have traditional characteristics of political communities, but not necessarily a physical territory. The communal bond can be global in nature – such as a shared concern about climate change, ageing, veganism and animal rights (i.e., a universal community, open to everyone) – or ascriptive, such as a Jewish / *Bahá'í* faith / Diasporic Cloud Nations, a form of 'transnational nationalism' (i.e., a selective community, open only to certain members). It can be thematic or geographic – region, country, state, city, village – based on a shared interest or territorial identity, even if not corresponding to existing borders or legally recognised communities. Membership is based on consent; a person can be a member of several communities or none. The goal varies, but my focus is *political* communities. Cloud communities are not social networks, but political communities whose aim is political decision-making and in which individuals take part in a process of governance and the creation of law. The legal source for it can be Article 25(1) of the International Covenant on Civil and Political Rights (ICCPR), according to which 'every citizen shall have the right and the opportunity … to take part in the conduct of public affairs, directly or through freely chosen representatives.' Such a community may function in four areas: law (constitution, membership acquisition, registry), governance (political institutions, diplomacy, international agreements, taxes), welfare services (education, healthcare, social security), and economy (trade, corporate activities, fees). It can provide an ID registry, a dispute resolution system, collaborative decision-making, a virtual bank, and a voting system. In a sense, religions are a form of 'cloud communities': virtual and borderless, but not voluntary and decentralised.

Procedurally, cloud communities can be established in two ways. A top-down community can be set up by an international organisation, such as UN organs, as an advisory body to an existing UN organ (WHO, FAO, UNESCO), or in policy areas of global importance (the 17 UN Sustainable Development Goals is a good start). A bottom-up community can be set up by any number of international legal personas on a topic of common interest; as time passes by and the community reaches a certain numerical threshold, it can apply for a 'Consultative Status' at the UN (Article 71, UN Charter[25]). As in other mechanisms of advisory decision-making (e.g., advisory referendum), the outcome may become politically, even if not legally, binding.

Cloud communities are not a replacement for the state, but they offer global citizens sharing a common goal, interest, or identity new ways of interacting and collaborating with each other; they are 'state-like' entities.

The future of citizenship: dynamic and multilayered?

In today's world, one is a participating member in multiple political communities, each of which has different functions and comes with a different set of rights and duties. Citizenship is multilayered.[26] It is, for example, national and supranational, as demonstrated by European Union citizenship or – quite differently – an African Union passport.[27] It can be territorial and digital, as demonstrated by e-Estonia (https://e-estonia.com/), the first digital residency program in the world. In the blockchain-based digital society of e-Estonia, everyone can acquire e-residency in Estonia in order to access its digital governmental services; e-residents can establish a business in Estonia, register a company, participate in an e-school, open a bank account, and have an Estonian digital ID (e-residents are not entitled to physical residency in Estonia unless they fulfil the regular visa requirements – thus, they are e-

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[25] Available at http://www.un.org/en/sections/un-charter/un-charter-full-text/

[26] Bauböck, R. (2017), 'Political Membership and Democratic Boundaries', in Shachar, A., R. Bauböck, I. Bloemraad & M. Vink (eds.), 60-82. *The Oxford Handbook of Citizenship*. Oxford: Oxford University Press.

[27] The implementation of the African Union Passport, which is set to 2020, will facilitate the notion of an international legal persona as it would provide a legal identification to million Africans who currently lack a registered ID.

residents without physical residency rights.) In July 2017, there were more e-residents than newborns in Estonia[28] and the country is planning is to reach 10 million e-residents by 2025, which will make its virtual population almost ten times larger than its territorial population (1.3 million in 2017).

Existing attempts to create 'cloud communities' – such as Bitnation and e-Estonia – already offer non-territorial forms of political membership, remodel the way people think about sovereignty, and challenge the definition of the state as we know it – as a legal entity that must have a physical territory and a centralised governance.[29] Citizenship, *à la* Bitnation and e-Estonia, resembles a business model where states are service providers and 'citizens' are billed for the service – from education to healthcare to infrastructure. In this model, there is no lifetime membership but fixed membership contracts, which can be renewed or become permanent.

If we had to design a new international legal system, given today's political and technological conditions, would it be like the current system? The world is ready, more than ever before, for realising of one of the most morally-desirable notions in human history – global citizenship (*Weltbürgerschaft*) without a world state, as envisioned by Immanuel Kant in 1795. Such a vision is an addition to, and an improvement of the existing citizenship regimes that evolved in a completely different era. Are we ready to embrace the global citizenship that new technologies offer to us?

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[28] Fraga, D. (2017), 'The Birth of a Digital Nation in Estonia', *Next Nature Network*, August 30, available at https://www.nextnature.net/2017/08/estonia-more-e-residents-than-babies/

[29] Certainly, e-Estonia and Bitnation represent opposite functions of cloud communities. While e-Estonia uses new technologies to expand the global reach of a nation-state, Bitnation seeks to disrupt the current system by offering an anarchic post-nation state world of voluntary virtual communities. I thank Rainer Bauböck for this point.

Citizenship in Cloud Cuckoo Land?

Rainer Bauböck[*]

We are in the midst of a digital revolution that could transform societies worldwide as profoundly as the agrarian revolution of the Neolithic age and the industrial revolution of the 19th century did. No doubt, new technologies will also deeply affect the structure and boundaries of political communities and the meaning of citizenship. Liav Orgad tells a hopeful story about the benefits of blockchain technology. It can serve to create an international legal identity for every human being and new forms of non-territorial political community in which citizenship is based entirely on consent. I share Orgad's sense of excitement about the speed and depth of change that we are witnessing. But I am less optimistic about the future of citizenship.

The progressive potential: providing global legal status and enabling global civil society

Orgad's first suggestion is that digital technologies will make it possible to provide every human being with an international legal persona, a '*default* lifelong identity and membership for *every* person, which cannot be waived or withdrawn' (original emphases). This would indeed be a major achievement. In less developed countries and autocratic regimes, millions of births are not registered. Unregistered persons are de facto stateless and cannot claim services or rights from governments that do not recognise them as nationals.[1]

Yet blockchain, the technology that he sees as most promising for this task, is not a tool to improve governments' administrative capacities. It is a decentralised ledger that is not under the control of any government or corporation. Individuals control themselves what their registered identity is (e.g. their chosen gender) and who gets access to their linked data (such as health or education records). This is why Orgad sees in blockchain technology a potential 'to provide people with *self-sovereign identity*' (original emphasis).

There is an obvious tension between these two goals: providing every human being with an unalterable and unique identity, on the one hand, and providing them with sovereign control over their identity related data, on the other hand. Births and deaths must be registered by someone else than the individuals concerned. Presumably adult individuals, too, are constrained in their choices because they must not opt out by deleting their international legal identity or subvert the global registry by assuming that of another person. More importantly, governments will not be out of business. Even if the act of registration is certified in a decentralised ledger, governments must recognise it in order for individuals to enjoy legal statuses and rights that only states can grant.

Orgad seems to be aware of this tension when he writes that a global ID is not a status of world citizenship and that it would supplement rather than replace national citizenships assigned by governments. But he also wants to put it to uses that would undermine the international system of sovereign states as we know it. When Orgad suggests that all individuals could be represented equally in making international law, he must have some form of global federal democracy in mind, e.g. a 'peoples' assembly' enjoying co-legislative powers with a body in which each state has one vote, as in the UN General Assembly.[2]

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[1]   For Africa see Manby, B. (2016), *Citizenship Law in Africa. A Comparative Study*. New York: Open Society Foundations, 3rd edition, available at https://www.opensocietyfoundations.org/sites/default/files/citizenship-law-africa-third-edition-20160129.pdf

[2]   Proposals for a UN reform along these lines have been made since the 1990s. See Archibugi, D. (1993), 'The Reform of the UN and Cosmopolitan Democracy: A Critical Review', *Journal of Peace Research* 30 (3): 301-315.

His main vision is, however, the emergence of alternative forms of political community at the sub-global level: cloud communities or virtual nations that individuals can join based on shared concerns or ascriptive identities that transcend the territorial boundaries of states. Orgad envisages two ways how these communities can come about: bottom up or top down. People concerned about global social justice could form cloud communities promoting this goal, whereas others may want to join a global ethnic or religious diaspora. The UN could initiate cloud communities that support its development or climate change goals, but also states or regions could set them up to empower their diasporas.

To me, these applications of cloud communities look like an expansion of civil society, of international organisations, or of traditional territorial polities into cyberspace, rather than like genuinely new forms of political community. If this is what they are, then cloud communities could provide great opportunities. They could mobilise individuals across the world for goals of global justice or climate protection. And they would provide new spaces for civil society in states that suppress individual liberty and oppress ethnic or religious minorities. I imagine that states and global corporations, even if they cannot control the underlying blockchain registries, will find ways to instrumentalise or hijack cloud communities for their own purposes, as they already do with the internet and social media. Autocrats have done so with new communication technologies ever since the invention of the printing press. Yet this is not my main worry. It would be wrong as well as futile to reject new technologies that enhance individual freedom because they can also be used to constrain it.

The threat to democracy: should we be ruled by voluntary associations?

My main worry is that cloud communities may provide new global spaces for citizenship as civic participation while undermining its foundation as equal membership in territorial polities. This tension emerges from contrasting mechanisms for determining membership in civil society and in political communities. Civil society is the realm of voluntary association in between the involuntary associations of families, firms and states.[3] In contrast with a global ID, which would register another form of involuntary membership, that of belonging to the human species, cloud communities must be voluntary associations. Individuals sort themselves into such communities by applying for membership or opting out while communities enjoy collectively powers to determine the conditions for admission. A vibrant sphere of voluntary associations is an essential element of democratic citizenship. And in an increasingly interconnected world it is indeed highly desirable to expand civil society so that individuals can act as global citizens in voluntary associations that pursue global agendas.

But they can do so only because and insofar as they have a secure territorial citizenship that protects their fundamental rights and makes them equal members of a political community that most of them have not chosen to belong to. The social contract metaphor that has informed liberal thinking about citizenship since Hobbes, Locke and Rousseau is misleading in this respect. Citizenship as a legal status of membership in a territorial polity has never been based on consent. Citizenship in today's states is generally acquired at birth – either through birth in the territory or descent from citizen parents. Immigrants may opt in through applying for naturalisation but – as the word itself signals – they join a birthright community. Emigrants may opt out through renouncing their nationality, but they can generally do so only if they have already resided abroad for some time and have acquired another citizenship. The non-voluntary nature and automatic acquisition of citizenship are even stronger at local and regional levels. Local citizenship is, or should be, generally based on residence rather than birth. By taking up residence in another municipality I become a local citizen and

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[3] See Bauböck, R. (1996), 'Social and Cultural Integration in Civil Society', in R. Bauböck, A. Heller & A. Zolberg (eds.), *The Challenge of Diversity. Integration and Pluralism in Societies of Immigration*, 67-132. Aldershot, UK: Avebury.

acquire rights to be represented in local government. In an increasing number of democracies this principle of *ius domicilii* is also extended to foreign nationals who are granted voting rights in local elections.[4] Finally, regional citizenship in federal states or supranational unions is automatically derived from nationality. I am a citizen of the province of Lower Austria and a citizen of the European Union because I am an Austrian national. Birthright, residence and derivation are three complementary ways how territorial polities determine who their citizens are.[5] None of them is based on voluntary association.

But why should we not see cloud communities building on blockchain technology as finally realising the social contract ideal by enabling us to shed the coercive straightjacket of nonvoluntary citizenship and transforming all political communities into voluntary associations? My response is that this would be fatal for democracy. Already Aristotle knew that, unlike families, democratic polities are association of diverse individual. These have only one thing in common: a shared destiny that links the freedom and well-being of each to the collective freedom and good of all. The territorial bases and automatic attribution mechanisms of citizenship create political community among individuals that differ profoundly in their interests, identities and ideas about the common good. Democracy is a set of institutions and procedures that provide solutions to collective action problems and legitimacy for coercive government exercised over a set of individuals who have been thrown together in a territory instead of having chosen each other in a voluntary association.

Voluntary associations in civil society and territorial democracies are thus based on categorically different membership principles. Cloud communities could strengthen democratic citizenship if they contribute to expanding civil society to global scale. They would, however, undermine democracy if they took over the provision of public goods and functions of coercive government from territorial polities. Imagine what kind of cloud communities would be formed if these enjoyed powers similar to today's states. Individuals would sort themselves out into like-minded sets just as they do in the echo chambers of today's social media networks. The rich would form non-territorial polities that provide them with the best medical, educational and private security services worldwide without taxing them to finance adequate services also for the local poor. The dreams of nationalists of matching ethnocultural with political boundaries would finally come true if the latter are no longer territorial since, unlike territory, voluntary association is not a scarce resource. The boundaries of political communities would be constantly reshaped in efforts to get rid of minorities or lower classes who have become redundant in a digitalised economy.

This is in my views a dystopian rather than a utopian scenario. I do not think it is likely to happen any time soon, because states are powerful beasts that have been skilful in adapting to technological revolutions and using them for their purposes. I also think that most individuals are attached to territorial democracy and citizenship and will fight back politically against what they regard as excesses of globalisation. Unfortunately, they do so today often through voting for populist parties and politicians that promote an illiberal transformation of democracy. The task for liberal democrats is to strengthen the integration of territorial democracies by bridging the cleavage between mobile and globally oriented populations, on the one side, and immobile ones that experience a shrinking of their opportunities and life-worlds, on the other side.

But maybe this is a period of transition and the next generations of digital natives will be much more footloose than today's sedentary majorities? A combination of a steep rise in global mobility with digital technologies empowering non-territorial political communities may make preserving

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[4]   Arrighi, J.-T. & R. Bauböck (2017), 'A multilevel puzzle. Migrants' voting rights in national and local elections', *European Journal of Political Research* 56 (3): 619–639.

[5]   See Bauböck, R. (2017), *Democratic Inclusion. A Pluralistic Theory of Citizenship*. Manchester: Manchester University Press, 57-87.

territorial democracy and citizenship a hopeless goal. Individuals' primary political allegiances would then no longer be to a community of citizens rooted in a particular territory but to their self-selected cloud community. It may happen, but democracy would then separate individuals living next to each other instead of uniting them as equal citizens in spite of their differences. This is not going to be Aristophanes' cloud cuckoo land.

Citizenship in the Era of Blockchain-Based Virtual Nations

Primavera De Filippi [*]

In the last decades, modern democracies have been witnessing a low rate of political participation and civic engagement with existing governmental institutions. Low voter turnout, especially with younger generations, is raising significant concerns for many representative democracies, and trust in public institutions has dropped to a point that it has become difficult for people to engage in political activity.[1]

Civic participation is not dead, however, it is only shifting to a new space. With the advent of internet and digital technologies, citizens of the world are coalescing into increasingly globalized social movements,[2] paving the way for new forms of political engagement.[3] With the blockchain, these individuals could find new ways to spontaneously organize and coordinate themselves into transnational 'cloud communities', and – as Liav Orgad suggests – even acquire their own self-sovereign identity that subsists independently of any nation-state. Those, I believe, are some of the most compelling developments of blockchain technology, which I have been following closely over the past few years.

But what makes blockchain technology a powerful tool for promoting disintermediation and decentralized coordination – i.e. a *trustless technology* – also constitute one of its greatest limitations, especially when it comes to political deliberation. While politics is about reaching a compromise between conflicting interests and values, blockchain technology operates via distributed consensus and an exit-based conflict resolution system. As underlined by Rainer Bauböck, relying on voluntary cloud communities as a means to govern society could significantly increase inequalities, leading to an overall loss of democratic representation and wealth redistribution.

In a sense, I agree with both Orgad and Bauböck. When brought to an extreme, blockchain technology could create – simultaneously – a utopian society characterized by greater individual freedom and autonomy, and a dystopian society driven by market-based incentives and self-dealing. But reality is neither black or white; it often has many different shades of grey. I see blockchain technology as neither the cure nor the curse of today's political issues. Rather, I see it as a tool that could enable us to experiment with new governance structures and alternative political systems – in a world where there is very little room left for experimentation.

Multiple shades of activism

Digital activism is a not a recent phenomenon. Social movements increasingly leverage the power of digital technologies to coordinate themselves and communicate to a broader audience – as illustrated

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[1] According to Pew Research, in 2016, only 19 per cent of Americans said they trust their government, among the lowest levels in the past half-century. See http://www.people-press.org/2015/11/23/beyond-distrust-how-americans-view-their-government/. The same is true at the international level. A GCF survey found out that 85 per cent of the respondents in eight countries believe that the UN needs to be reformed to better deal with global risks and 71 per cent support the establishment of a new supranational organization. See https://api.globalchallenges.org/static/files/ComRes.pdf

[2] Cohen, R. & R. Shirin (eds.) (2004), *Global social movements.* London: A&C Black.

[3] Della Porta, D., & S. G. Tarrow (eds.) (2005), *Transnational protest and global activism*. Lanham (MD): Rowman & Littlefield.

by the role played by social media during the Arab uprisings in 2011.[4] But the internet also enabled the emergence of new communities of kinship, with a variety of online platforms (e.g *Facebook, Twitter, Whatsapp*) gathering people around specific interests or values, regardless of their political views. Some of these communities operate as tight social groups, providing members with a newfound sense of belonging and a collective identity.[5] While they do not engage in what we usually regard as political activity, these online communities play a key role in shaping the way people organize and coordinate themselves, in ways that significantly differ from those of existing political institutions.[6] Apart from the legal regime these communities operate with, they are governed by their own systems of rules and social norms – which members voluntary abide by.

In her book, 'Social Movements and Their Technologies: Wiring Social Change', Stefania Milan illustrates the different approaches of social movements in materializing their ideas into the world.[7] *Insiders* adopt a cooperative attitude: they recognise existing institutions as a legitimate source of power and actively engage in their game, through advocacy and traditional decision-making procedures.[8] *Outsiders* adopt a more confrontational attitude: they reject the rules of these institutions and choose instead to exert pressure from the outside, through campaigns, protest or other form of political resistance.[9] Finally, what she refers to as *beyonders* are a wholly different bunch. *Beyonders* simply refuse to engage with existing institutions: they do not want to fight them nor do they want to change them, they simply regard them as a leftover from a past era – which they are trying to render obsolete by building new systems.[10] Thus, relatively to the other two groups, *beyonders* operate in a way that is more autonomous or independent; they do not play for or against the established political system, they just decide to ignore it or bypass it.

Is it fair to conclude that *beyonders* do not play a political role in society? Clearly not. By creating an alternative to existing institutions, they exert an indirect pressure forcing them to adjust themselves to maintain their position. Perhaps more so than *insiders* and *outsiders*, who operate within a given political framework, *beyonders* are deeply concerned with social change. Their political action is the result of a constructive reaction to the current state of affairs. They are responding to their own needs using new schemes and methodologies, leveraging the power of communities to create new institutions that will help them fulfil their missions – through what essentially amounts to a new form of political organisation.

Beyond the blockchain

Today, in the shadow corners of the internet, a new group of *beyonders* is emerging, looking at blockchain technology as a means to replace many of our traditional institutions. While most of the

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[4]   Howard, P. N., A Duffy, D. Freelon, M. M. Hussain, W. Mari & M. Maziad (2011), 'Opening closed regimes: what was the role of social media during the Arab Spring?', *Project on Information Technology & Political Islam Working Paper 2011.1*, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2595096

[5]   Wellman, B. & M. Gulia (1999), 'Virtual communities as communities: Net surfers don't ride alone', in M. A. Smith & P. Kollock (eds.), *Communities in cyberspace*, 167-194. London; New York: Routledge.

[6]   Norris, P. (2002), 'The bridging and bonding role of online communities', *Politics* 7 (3): 3-13

[7]   Milan, S. (2013), Social movements and their technologies: Wiring social change. London: Springer, 118-136.

[8]   Moe, T. M. (2005), 'Power and political institutions', *Perspectives on Politics* 3 (2): 215-233.

[9]   Maloney, W. A., G. Jordan & A. M. McLaughlin (1994), 'Interest groups and public policy: the insider/outsider model revisited', *Journal of Public Policy* 14 (1): 17-38.

[10] Hintz, A. & S. Milan (2011), 'User rights for the Internet age: Communications policy according to "Netizens"', in R. Mansell & M. Raboy (eds.), *The handbook of global media and communication policy*, 230-241. Chichester, West Sussex; Malden, MA: Wiley-Blackwell.

attention was put, initially, on Bitcoin disrupting banks and other financial operators,[11] as people understood the full potential of blockchain technology, they saw it a means to implement new governance structures that could potentially replace some of our existing systems of governance.[12]

At the extreme end of this spectrum are those who envision the creation of new blockchain-based virtual nations, with a view to ultimately replace the nation-state. This is the case, for instance, of *Bitnation*: an initiative aimed at creating a new sovereign jurisdiction that operates only and exclusively in cyberspace, independently of any geographical boundaries. Founded in 2014, *Bitnation* describes itself as a *decentralized borderless voluntary nation* that anyone can join or leave as they wish:[13] a transnational community of global citizens that spontaneously coordinate themselves, with no recourse to coercion.

To early internet pioneers, this might sound familiar. Already in 1996, in the 'Declaration of the Independence of Cyberspace', John Perry Barlow described the digital world as an independent space that simply could not be regulated, because – he claimed – governments did not have the right nor the capacity to exert their sovereignty over it[14] (even though history has eventually taught us otherwise).

Barlow was essentially a *beyonder* – mocking the various governmental attempts at regulating the internet landscape, in ways that he considered to be ineffective in this new digital era. Similarly, *Bitnation* is mostly the result of a *beyonders'* approach to governance, trying to create a new sovereign nation that ignores the rules and procedures of existing nation-states, regarded as obsolete in this new digital world. Because it operates on a transnational and decentralized peer-to-peer network (the *Ethereum* blockchain), *Bitnation* is not under the control of any one government. Indeed, by relying on blockchain technology, *Bitnation* is creating a system that not only tries to escape from the hegemony of nation-states – because it has no single point of failure, or control – but also tries to compete with existing institutions and governmental systems – by providing self-sovereign identities, notarization services, property rights and company registration, dispute resolution systems, etc. which are usually associated with the functions of the public administration. The Ethereum blockchain is particularly useful in this context, because – as a public and transnational blockchain – it provides the necessary transparency, verifiability, incorruptibility and trust that one would expect from these governmental services.

'*Governance in the real world is so fucked. We have to start thinking about how to build it in the virtual world*' said Lawrence Lessig in an interview[15], after he resigned from the 2016 presidential campaign. While Lessig was referring to the creation of a massive multiplayer online game[16] inviting players to experiment with different forms of governances, it might be worth investigating whether initiatives such as Bitnation, and other attempts at creating blockchain-based virtual nations (such as *Cultu.re)* or even blockchain-based virtual worlds (such as *Decentraland*) could actually provide a

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[11] De Filippi, P. (2014), 'Bitcoin: a regulatory nightmare to a libertarian dream', *Internet Policy Review* 3 (2): 43.

[12] Davidson, S., P. De Filippi & J. Potts (2016), 'Disrupting governance: The new institutional economics of distributed ledger technology', available at SSRN: https://ssrn.com/abstract=2811995

[13] According to the Bitnation website, Bitnation is a decentralized is fostering 'a peer-to-peer voluntary governance system, rather than the current "top-down", "one-size-fits-all" model, restrained by the current geographical apartheid, where your quality of life is defined by where you were arbitrarily born.' See https://bitnation.co/join-the-team/

[14] '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.' Barlow, J. P. (1996), Declaration of Independence of Cyberspace. Available at http://homes.eff.org/~barlow/Declaration-Final.html

[15] '"Governance in the Real World Is So Fucked:" Lawrence Lessig Is Working on an MMO', *Motherboard*, 8 June 2017, available at https://motherboard.vice.com/en_us/article/neweqm/lawrence-lessig-is-working-on-an-mmo-game-seed

[16] 'Think the government is doomed? See if you can build a better one in "Seed"', *Digital Trends*, 8 March 2017, available at https://www.digitaltrends.com/gaming/seed-mmo-interview-democracy-lawrence-lessig/

new space of experimentation, allowing people to experiment with new political systems that operate outside of any defined territory. Indeed, these initiatives – which rely on decentralised blockchain-based systems – are not located in any given jurisdiction: they subsist in a transnational space, which has yet to be colonised by new governance structures and experimental political regimes.

Blockchain-based virtual nations

Can these blockchain-based systems support the emergence of a new framework for *global citizenship* (as suggested by Liav Orgad, amongst others[17]) where people pledge allegiance not to an existing government or nation-state, but to a global community that transcends national boundaries?[18] Can they support a new understanding citizenship as *collective identity,* providing new opportunities for collective action and civic participation in a post-national world?[19] As with many things today, the answer is not a simple one. The concept of blockchain-based virtual nations is interesting because it is highly controversial. It is, in fact, supported by different groups, for very different purposes.

On the one hand, the concept of a virtual nation is appealing to many libertarians, who see it as an opportunity to reduce the room for governmental intervention, by creating new ad-hoc governmental structures aimed at creating a society governed by (unregulated) market forces, and nothing else. This is the vision brought forward most prominently by Peter Thiel, who envisions the creation of a new sovereign nation on an offshore artificial island[20], built 200 miles off the Californian coast. This vision is also shared by a number of crypto-libertarians,[21] such as the team behind *Bitnation*, who believe that – since we have lost trust in our governments – we shall now rely on blockchain technology to create *trustless systems* (*i.e.* systems where trust is no longer needed) with a view to support and facilitate a series of atomic peer-to-peer interactions in a seemingly stateless environment.[22]

On the other hand, there are people who see virtual nations as an opportunity to overcome the lack of trust in governmental institutions, through the creation of new trusted communities with a global scope. These communities can experiment with new institutional structures that operate independently from, or as a complement to existing institutions. They can support the emergence of grassroots initiatives designed to fill the gaps generated by the progressive shrinking of the welfare state – *i.e.* the provision of public services and shared infrastructure, the pursuit of the common good, and the protection of individual and collective rights.[23] Blockchain technologies could provide new mechanisms of social or political coordination, allowing for transnational communities and activist

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[17] The notion of 'world citizen' has been endorsed by a variety of scholars, activists and social movements. See, in particular, Ulrich Beck's notion of 'cosmopolitanism' and discussions on the 'post-westphalian' international system. See Beck, U. (2003), 'Toward a new critical theory with a cosmopolitan intent', *Constellations* 10 (4): 453-468; Beck, U. & N. Sznaider (2006), 'Unpacking cosmopolitanism for the social sciences: a research agenda', *The British Journal of Sociology* 57 (1): 1-23.

[18] See also the work of Tölölyan, K. (1996), 'Rethinking diaspora(s): Stateless power in the transnational moment', *Diaspora: A Journal of Transnational Studies* 5 (1): 3-36; Grewal, I. (2005), *Transnational America: feminisms, diasporas, neoliberalisms*. Durham: Duke University Press; and Van Hear, N. (2005), *New diasporas: The mass exodus, dispersal and regrouping of migrant communities*. London: Routledge (on diasporas as transnational entities).

[19] Sassen, S. (2002), 'Towards post-national and denationalized citizenship', in E. F. Isin & B. S. Turner (eds.), *Handbook of citizenship studies*, 277-292. London: Sage.

[20] 'Libertarians Seek a Home on the High Seas', *The New Republic*, 29 May 2017, available at https://newrepublic.com/article/142381/libertarians-seek-home-high-seas

[21] May, T. C. (1994), *Crypto anarchy and virtual communities*. Available at http://aom.jku.at/archiv/cmc/text/may_n01.pdf

[22] Atzori, M. (2015), 'Blockchain technology and decentralized governance: Is the state still necessary?', available at SSRN: https://ssrn.com/abstract=2709713 or http://dx.doi.org/10.2139/ssrn.2709713

[23] Feigenbaum, H., J. Henig & C. Hamnett (1998), *Shrinking the state: The political underpinnings of privatization*. Cambridge: Cambridge University Press.

groups (such as human rights defenders, internet freedoms advocates and climate change campaigners) to gather around a newfound sense of identity and organise themselves as a collective.

The idea is not to replace nation-states with new or competing forms of sovereignty, but rather to provide new means for global communities to mobilise and experiment with new ways of engaging in civic life. If political participation no longer finds its place in the context of traditional governmental structures, perhaps these virtual communities – or *cloud communities*, as Orgad calls them – might be able to bring civics back to life. Indeed, if citizenship refers not only to a legal status, but also to an individual's political activity and collective identity,[24] we might soon witness the emergence of new global citizens, who regard these new virtual nations as *polities* and self-identify as their members.

This is the vision supported by initiatives like *Democracy Earth* and *Aragon*, two blockchain-based platforms providing tools for small and large organisations to operate in a globalised post nation-state world, through their own governance rules and dispute resolution systems. Without trying to replace the role of the state as a political institution, these initiatives are exploring whether (and how) some of the functions undertaken by governmental authorities – e.g. the issuance of identity cards, recordation of vital records and maintenance of public registries, etc. – could be transposed into a blockchain-based system.

People are thus ideally free to decide, on a case-by-case basis, whether they want to rely on traditional institutions and governmental frameworks, or whether they would rather adopt these new experimental systems, whose values they might feel more attuned with. As a general rule, citizens cannot easily revoke their allegiance to a particular nation-state, because – as highlighted by Rainer Bauböck – the *social contract* described by Hobbes and Rousseau is not a negotiable contractual agreement entered into by consent (*i.e.* citizenship as a legal status is generally something that one does not chose and that, once acquired, cannot be easily gotten ridden of). Yet, to the extent possible, they could choose to acquire additional citizenships, becoming members of multiple communities based on affinity and consent. Insofar as they provide valuable services to their citizens, these virtual communities (or *virtual nations*) may be competing with one another – and potentially with nation-states – so as to expand their user-base.

While this might sound speculative at best, we are already seeing glimmers of this world. For several years, the republic of Estonia has been trying to create a 'digital nation for global citizens,'[25] as illustrated by its e-residency program, which provides a government-issued digital ID to all individuals requesting it. Inspired by the notion of *government as a platform*,[26] e-Estonia is trying to become the hub for every governmental service, providing all of its electronic residents with a secure identification system, notarisation services, and even the ability to run a company or open a bank account, without ever putting foot into Estonia. With over 28,000 e-residents from all over the world, today, the state of Estonia increasingly operates on a digital layer, enabling people to interact with its governmental platform independently of their country of citizenship or residency.[27]

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[24] Dalton, R. J. (2008), 'Citizenship norms and the expansion of political participation', *Political Studies* 56 (1): 76-98; Eisenstadt, S. N. & B. Giesen (1995), 'The construction of collective identity', *European Journal of Sociology* 36 (1): 72-102.

[25] 'E-Residency is a new digital nation for global citizens, powered by the Republic of Estonia.' See https://e-resident.gov.ee/

[26] O'Reilly, T. (2011), 'Government as a Platform', *Innovations* 6 (1): 13-40.

[27] According to Taavi Kotka, Chief Innovation Officer of Estonia since 2013: '*Countries are like enterprises. They want to increase the wealth of their own people*.' Heller, N. (2017), 'Estonia, the Digital Republic', *The New Yorker*, 18 December, available at https://www.newyorker.com/magazine/2017/12/18/estonia-the-digital-republic

Competing sovereignties

Competition between nation-states, trying to collect new members by providing more efficient or reliable governments services, has, therefore, already begun. If Estonia can collect e-residents on a global scale – in spite of its national boundaries – what would prevent virtual nations from doing the same, without a physical territory? Are we actually moving towards a world in which multiple nations are competing to attract more citizens, in the same way as companies are today competing to attract more customers?[28]

Of course, things get murky when we move from purely administrative tasks – like identity, property and company recordation – to more political tasks, involving policy and decision-making. If people could choose to become citizens only of the communities with whom they agree, they would essentially engage in a generalised version of nation-shopping, constantly trying to find the jurisdictions that seem the most advantageous for them. When brought to an extreme, this would ultimately mean the end of politics.

Politics is all about compromises, in order to accommodate different viewpoints without entering into a conflict. An *opt-in* or *exit-based* political system essentially eliminates the notion of politics, because it removes the need for compromise. People with different values or opinions would no longer need to argue and deliberate in order to reach consensus, because if they're in disagreement, they can simply leave.

As Bauböck recognises, there are significant challenges in letting people choose which nation they want to pledge allegiance to. The state as a sovereign entity – Hobbes' *Leviathan* – is not only responsible for preserving the public order, it is also in charge of promoting the general interests, producing common goods and creating a collective sense of redistribution and justice. All these functions could disappear as we move towards a more market-based approach to citizenship.

I am, however, more pessimistic than Bauböck when it comes to the way nation-states will adapt to these technological changes. Given the progressive disengagement of citizens in local politics, and the growing distrust in existing institutions – whose legitimacy is increasingly put into question – it might not be surprising to see a new wave of nationalism emerging all over the world, with nation-states drawing on nationalist and anti-immigration narratives to reinforce their hegemony over the territory, essentially redefining on-going relationships between citizens and non-citizens.[29]

At the same time, due to the increasing trends towards globalisation, large internet corporations, like Google or Facebook, are progressively taking on some of the functions that were once specific to the nation-state: from the task of supporting the discourses in the public sphere to the role of acting as identity providers.[30] With several billions of users on their platforms, these corporations are slowly turning into *de facto* corporate nations, with their own system of rules that they unilaterally define and impose on their 'citizens'. Traditional nation-states might, therefore, soon have to compete not only with virtual nations, but also with these new transnational corporate nations – similar to Neal Stephenson's *franchulates* as science-fiction fans will certainly point out.[31]

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[28] According to its website: 'Bitnation is creating a new world where thousands or millions of nations actually compete for customers by providing better services, instead of using force. It's a world where everyone can choose.' See http://bitnation.co

[29] Mitchell, K. (1997), 'Transnational discourse: bringing geography back in', *Antipode* 29 (2): 101-114.

[30] Habermas, J. (1991), The structural transformation of the public sphere: An inquiry into a category of bourgeois society. Cambridge, MA: MIT press.

[31] Stephenson, N. (1992), *Snow crash*. New York: Bantam-Random.

New opportunities for experimentation

It is in this convoluted (and daunting) context that I see the rise of blockchain-based virtual nations as a positive omen. Perhaps the reference to *virtual nation*s is not the most accurate one, because the term has a strong political connotation and somewhat gives the impression that these communities are assuming the role of traditional nation-states. While some of these communities do intend to replace the figure of the nation-state (e.g. Bitnation), others are simply trying to experiment with new and allegedly *apolitical* governance systems,[32] which nevertheless play a crucial political function.

Because they rely on voluntary association, virtual communities might well remove the need for compromises within a single community, yet they do not eliminate the need for compromise between multiple communities. Hence, politics are not gone, they are simply moving into a different layer. By aggregating people with similar values and opinions, these virtual communities could in fact strengthen the voice of certain minorities – usually stifled by the majority's opinion – and create a more lively debate and political discourse at the outside (rather than on the inside) of these communities. As such, they could end up participating in conventional politics, along with other real-world interests groups.

To conclude, let me take the stance of a *beyonder* for a moment. As a member of *Creative Commons*,[33] I have always been fascinated by its solution. Instead of trying to reform copyright law from the inside or fight it from the outside, Creative Commons introduced an alternative legal regime for creative works that coexists with the existing regulatory framework (in fact, it is based on it) for authors to experiment with new business models that do not rely on the exclusivity and artificial scarcity of copyright law.

Today, with the advent of blockchain technologies, a new wave of innovation is underway in the realm of governance. This innovation is one that will benefit everyone: the *insiders*, *i.e.* governmental authorities like Estonia, relying on blockchain technology to increase the transparency and accountability of public administrations; the *outsiders*, like Peter Thiel, trying to create new self-sovereign nations with the intention to escape from the laws and control of existing nation-states; and, of course, the *beyonders*, like Bitnation et al., eager to use the technology to support the coordination of transnational communities of voluntary association that operate independently of traditional nation-states, but are capable of peacefully coexisting with them. It is the latter which I am the most excited about, and which I believe could contribute to developing new governance models that might help us build a real global democracy.

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[32] Atzori, M. (2015), 'Blockchain technology and decentralized governance: Is the state still necessary?', available at SSRN: https://ssrn.com/abstract=2709713 or http://dx.doi.org/10.2139/ssrn.2709713

[33] Creative Commons is an organisation devoted to expanding the range of artistic, academic, and other content available for people to share and build upon. See http://creativecommons.org

Global Citizenship for the Stay-at-Homes

Francesca Strumia[*]

Technological advances sometimes alter our experience of well-established notions. The night is as dark today as in the 18th century. However streetlights have pierced its veil. The distance between Turin and Rome is the same today as it was in the first century AD. Yet what was once at least a week-long journey has become with high speed trains a commute of a few hours. Similarly, distributed ledgers technology, by making it technically possible for every individual to create and maintain a globally recognised digital identity, has the potential to materially alter the experience and the meaning of citizenship.[1] Such technological advances, and their possible applications, make global political participation, moral commitment and rights claiming as envisioned by global citizenship theorists one touch closer to reality.[2] Liav Orgad and Rainer Bauböck emphasize from different perspectives that new technologies are not meant to supplant citizenship as we know it; they rather add to it. The notion of an international legal persona – explains Orgad – is a complement to national citizenship. And cloud political communities are – in Bauböck's view – an extension of existing political communities. Hence, global citizenship comes to flank long-established notions of citizenship.

I agree with them on the complementary nature of global citizenship in respect to traditional one. And in this contribution I focus on the latter rather than on the former. I propose to consider how the prospect of technology-enabled global citizenship alters the concept, legal structure and scope of citizenship as we know it. The possibility of novel virtual frontiers challenges further traditional citizenship as a state-based, non-voluntary and bounded membership. A web of relations beyond the bilateral one between state and individual comes within the purview of the concept; consensual citizenship acquires a new role; and citizenship becomes increasingly unbounded from national borders.

A network model of citizenship

Cloud communities can cause a conceptual shift as they strike at the heart of the role of states in shaping citizenship. As Bauböck observes, global citizenship cannot push the state out of business. States remain responsible for providing a range of fundamental services and benefits. Yet the advent of distributed ledgers technology potentially breaks the state's monopoly in attributing and authenticating citizens' identities.[3] This nuances in turn the state's role as the main counterpart of the citizen. Citizenship no longer focuses on a binary relation between lord and vassal, sovereign and subject, state and individual. While that relation loses part of its feudalist character, to echo Orgad, citizenship comes to express a relation between different classes of 'belongers' to a legal and political community: the birthright members, the voluntary joiners, the reluctant leavers, the engaged passers-by, to mention just a few. Blockchain and other technologies will mean that their interactions are no

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longer exclusively mediated by the state and its rules. They would rather articulate through a web of virtual relations enabled by encrypted and self-governed digital identities.

A network model of citizenship pushes us to rethink, and possibly reframe, the legal structure and scope of citizenship as we know it. First, consent potentially gains a heftier role than it has traditionally played in the domain of citizenship. Second, cross-border citizenship receives a new lease of life.

More room for consensual citizenship

Consensual citizenship is traditionally the exception rather than the rule. The vast majority of humans are attributed a citizenship through a birthright lottery.[4] A tiny minority exercises consent to change citizenship through processes of naturalisation,[5] or renounces a citizenship automatically received. And consent is still only exercised within the narrow tracks designed by states for attribution and removal of citizenship. But otherwise citizenship is the legacy of blood relations or territorial connections one has never chosen.

With technology enabling participation of virtual citizens in cloud communities, the relative weight of consensual citizenship potentially changes. This is because participation in a cloud community could allow citizens to virtually vote with their feet.[6] It would enable everyone to decide to spend their digital identity in a community other than the territorial one to which one is assigned at birth. With the opening up of opportunities for virtual exit from the cage of territorial citizenship, the negotiating balance in the relation between state and individual changes. The question 'why am I a citizen of this nation state' no longer finds an obvious answer and individual citizens gain more clout against the states to which they automatically belong. On the one hand, this transformation may lead to rethink the opportunities for birthright members to confirm or withdraw their consent to membership.[7] On the other hand, it may result in states pushing their efforts to attract consenting passers-by into the ranks of their territorial citizenry, as they already do in part with investor citizenship programs.[8]

More room for consensual citizenship is not necessarily good news, as Bauböck observes. There are risks linked to consent. Bauböck sees the non-voluntary character of citizenship as a condition for preserving democracy: non-voluntary determination of citizenship is the only guarantee that political communities, whether territorial or virtual, preserve a healthy level of diversity. A further risk is that consensual cloud communities are resorted to as a means to harden the link between citizenship and territory rather than to loosen it. Cloud communities may easily become a tool for amplifying cultural traditions and national sentiments. They offer a platform for joining virtually different territorial pockets of supporters of closure and exclusion. From this perspective cloud communities risk to widen the gap between the mobile and globally oriented citizens on the one hand, and the immobile ones on

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[4] Shachar, A. (2009), *The Birthright Lottery: Citizenship and Global Inequality*. Cambridge: Harvard University Press.

[5] For instance, in the US out of a population of ca 300,000,000, only 19.8 million are naturalised citizens. See Pew Research Center, *Recent Trends in Naturalization 1995-2015*, June 29 2017, available at http://www.pewhispanic.org/2017/06/29/recent-trends-in-naturalization-1995-2015/ (consulted 19th January 2018).

[6] For an argument about voting with one's feet in federal states, see Tiebout, C. (1956), 'A Pure Theory of Local Expenditures', *The Journal of Political Economy* 64 (5): 416-424.

[7] For the theory of voice and exit see Hirschman, A. O. (1970), *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States*. Cambridge/London: Harvard University Press.

[8] See Shachar, A. & R. Bauböck (eds.) (2014), 'Should Citizenship be for Sale', *Robert Schuman Centre for Advanced Studies, EUDO Citizenship Observatory Working Paper 2011/62*, Florence: European University Institute, available at cadmus.eui.eu/bitstream/handle/1814/29318/RSCAS_2014_01.pdf

the other hand, as Bauböck points out.[9] Should this cleavage come to inform the competition among virtual nations that Primavera De Filippi envisions, global society could end up split between the virtual communities of those engaged across borders and the ones of those living in splendid isolation.

But technology-enabled global citizenship does not only nudge states gently towards consensual citizenship. It also enhances qualitatively the prospects of cross-border citizenship. Enhanced cross-border citizenship may hold the key to the bridge across the above referred gap between the mobiles and immobiles.

A citizen's stake beyond national borders

It goes without saying that digital identities and their applications multiply the opportunities for long-distance citizenship. They can help states to engage their diasporas through virtual communities. Or enable expats to receive benefits and services issued by their state of origin in a state of residence. In this sense, technology supports and complements the legal infrastructure underpinning cross-border movement and transnational citizenship.[10]

Beyond this, cloud communities of digitally identified participants have the potential to alter the very nature of cross-border citizenship. They open up opportunities for extending the reach of citizenship beyond the national territory even without cross-border movement. Cloud communities indeed offer to individuals the option to raise their voice, or claim benefits and services, in territorial communities to which they do not physically belong. States can open their communities to new classes of e-citizens along the lines of Estonia's e-residence program.[11] And sedentary citizens could negotiate virtual membership in states to which they will never travel.

In this sense, digital identities and cloud communities may create the right to have, and exercise, a stake in legal and political communities beyond the borders of one's own nation.[12] On a practical level, they enable states to recognise forms of ad hoc political citizenship and temporary virtual admission to accommodate the stakes of non-citizens. Relevant non-citizens could be given voice in selected deliberations of the territorial political community, touching upon the interests of a larger cohort of virtual denizens. On a conceptual level, the right that technology enables, if adequately recognized and framed within the legal structure of national citizenship, could fundamentally alter the scope of traditional citizenship. It would no longer be just the right to have rights, and raise a voice, within a bounded national territory but the right to have rights and to participate wherever interests, careers, affective life, chance or just curiosity bring one's stakes.

In a similar scenario, the counterpart of the citizen would no longer be just one state (or two in the case of dual nationals), but potentially the plurality of states within whose territorial boundaries a person's virtual interests unfold in the course of a lifetime. 'Why should states even bother to open their virtual borders to such virtual denizens?', one could wonder. In part, because a state's citizens would reciprocally benefit from the same opportunity in other states. Hence a state would accommodate virtual denizens to protect the interests of its own citizens. Further, states may have an

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[9] For an insightful analysis of the new gap between supporters and opponents of 'drawbridges up', see 'The New Political Divide', *The Economist*, 30 July 2016, available at https://www.economist.com/news/leaders/21702750-farewell-left-versus-right-contest-matters-now-open-against-closed-new (consulted 19 January 2018)

[10] Infrastructure that has one of its more sophisticated expressions in the citizenship of the European Union. See Strumia F. (2017), 'Supranational Citizenship', in A. Shachar, R. Bauböck, I. Bloemraad & M. Vink, *Oxford Handbook of Citizenship*, 669-693. Oxford: Oxford University Press.

[11] See Republic of Estonia e-residency program, available at https://e-resident.gov.ee/

[12] For the concept of stakeholder citizenship see Bauböck, R. (2017), *Democratic Inclusion. Rainer Bauböck in Dialogue*. Manchester, UK: Manchester University Press.

economic, or even political interest, in activating the stakes of some external e-citizens. Relevant citizens may contribute capital or economic initiative. Or they may support governmental policy choices.

Global citizenship for the stay-at-homes

The citizen's right to have a stake beyond national borders potentially bridges the cleavage between the globally mobile and the immobile. It belongs to, and appeals to the interests of, both classes of citizens. It can be exercised physically by the former group, and virtually by the latter through the novel channels that technology opens up. It is this very right that holds the potential to respond to nationalist and protectionist stances variedly represented in the contemporary political spectrum of several western countries. To the extent that these stances are driven by fear and insecurity, the concrete conferral of a right to have a stake beyond one's borders can teach the 21st century citizens an important lesson: that protection and security do not come from populist retrenchment into closure and exclusion. They rather come from the broadening of the umbrella under which citizenship claims can find accommodation.

As the night has become less dark and millenary cities have grown closer, also national citizenship can change to track not only the territorial boundaries of nation states but also the virtual ones of human stakes and interests. Never mind the gap between the mobiles and the immobiles. New technology brings about the gift of global citizenship for the stay-at-homes.

A World Without Law; A World Without Politics

Robert Post[*]

I have read with great interest the stimulating contributions of Liav Orgad, Rainer Bauböck, Primavera De Filippi, and Francesca Strumia. It is important to ask how a universal internet will affect the nature of citizenship, the status of which has heretofore been dominated by territorially-defined nation states.

I confess, however, that I know nothing about blockchain technology. So I accept Orgad's assertion that blockchain technology 'can provide people with *self-sovereign identity* – they are the ones who create and register their identity and they are the only ones who control what to do with it and with whom to share what.' I accept that nation states can off-load this identification function to some technological mechanism.

But Orgad seems to believe that this mechanism creates the possibility of 'realizing one of the most morally-desirable notions in human history – global citizenship without a world state.' This is because the mechanism potentially shatters a Westphalian system in which legal personality is conferred by nation states.

Orgad writes that 'the concept of an international legal persona will enable individuals to establish "Cloud Communities" of different kinds. Conceptually, cloud communities have traditional characteristics of political communities, but not necessarily a physical territory. The communal bond can be global in nature – such as a shared concern about climate change, ageing, veganism and animal rights (i.e., a universal community, open to everyone) – or ascriptive, such as a Jewish / Bahá'í faith / Diasporic Cloud Nations, a form of "transnational nationalism" (i.e., a selective community, open only to certain members). It can be thematic or geographic – region, country, state, city, village – based on a shared interest or territorial identity, even if not or legally recognised communities. Membership is based on consent; a person can be a member of several communities or none.'

So described, cloud communities are, as Rainer Bauböck properly observes, 'an expansion of civil society.' It is a far jump from expanding international civil society to creating global citizenship. A global citizen must be a member of a global *political* community. Orgad acknowledges this point. He states that his 'focus is *political* communities. Cloud communities are not social networks, but political communities whose aim is political decision-making and in which individuals take part in a process of governance and the creation of law.'

It is at precisely this point that I lose track of the argument. Orgad is correct to observe that the defining characteristic of political communities is the production of 'governance and the creation of law.' What I do not understand is how cloud communities produce governance and law.

By imposing sanctions of expulsion, any given cloud community can govern itself; it can create its own law. But this is true for every group within civil society. Every church has its rules and its criteria for excommunication. The point about a political community, however, is that it imposes law upon those who, as Bauböck observes, are not voluntarily members. Political communities govern all those within their jurisdiction. That is precisely the difference between political communities and a private organization. It is why law ultimately must have recourse to force, even to violence (as Max Weber observes).

A world in which every community is voluntary is a world in which every norm is also voluntary. It is therefore a world without law. Because politics is the social form by which we create law, it is also a world without politics.

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If I commit murder, the necessity of my punishment is not bounded by my consent. Cloud communities, which are defined by consent, are thus irrelevant. The question is who we will entrust with the fearsome power of involuntary punishment, which is not a purely textual, purely mediated consequence. To the extent that punishment operates on the body of the guilty, it cannot be within the purview of cloud communities.

De Filippi shrewdly observes that the attraction of blockchain technologies is to create '*trustless systems* (i.e. system where trust is no longer needed).' The hope that technology will remove the human element is an old one. We all long to leave behind the flesh and live only in the spirit. But this is merely a fantasy. There is always corruption, and for that reason we can never escape the need for politics, police, and law.

Suppose someone infiltrates the blockchain and manipulates it for nefarious ends. To whom will we entrust the power of ensuring the integrity of the chain? And don't think that it can never happen. It always happens. All technology is ultimately wielded by human hands that can become dirty. Who will have the power (to use an old-fashioned word) to cleanse the chain and restore the system? And how will that power be legitimised? How will we come to trust that power?

Politics is what we use in the face of such problems, when we must confront each other as distinct human beings and reach accommodation about essential matters in which we differ. Another way of seeing this point is this: If cloud communities create, as Strumia writes, 'citizens' who can 'virtually vote with their feet,' who will protect global citizens as they travel between cloud communities?

At their best, cloud communities can inspire all the virtues that de Tocqueville saw in civil associations. They can train us in the benefits of participation and sociality. But in the contributions of Strumia and Orgad, I sense also another value, that of free, autonomous, marketplace consumers. Orgad writes that e-Estonia 'resembles a business model where states are service providers and "citizens" are billed for the service.' Strumia imagines e-states that provide services to expats or 'virtual denizens.'

Strumia and Orgad emphasise real and important developments. But it is a mistake to confuse these possibilities with the creation of political communities. Strumia and Orgad are instead describing ordinary marketplace consumer transactions. If states can sell services cheaper than a private entity, and if they can sell these services internationally, that may be all to the good.

But what does this have to do with law and governance? To answer this query, we need to ask questions like: Who can (involuntarily) tax virtual denizens? Who can determine the commercial law that will govern the market transactions that a state conducts with virtual denizens? and so forth. Every market transaction presupposes a legal environment that is outside the transaction itself. Setting the requirements of that environment is a political task.

It is quite true that traditional states can offload services that now we associate with governmentality. Perhaps states can offload the determination of identity status to a blockchain. As the EU has taught us, it is a mistake to confuse government sovereignty with the particular shape in which it is presently exercised. But insofar as we wish to deploy *government* sovereignty – insofar as we wish to exercise state functions backed by the force of law – it is fearsome and unstable thing to do so without a corresponding political community, as the EU has also taught us.

If the very definition of cloud communities is that they are voluntary and exist only at the whim and interest of members, I do not see how blockchain cloud communities promise the creation of global citizenship. They seem instead to signal the emergence of global civil society or at most a global market in government services. And to the extent that cloud communities are involuntary, then I must ask how their members are conscripted and governed. And I must also ask how blockchains or any other technological device can offer hope that such governance will be more just or more democratic than what presently exists in traditional territorially-bounded nation states.

Virtual Politics, Real Guns: On Cloud Community, Violence, and Human Rights

Michael Blake[*]

The creation of novel forms of information technology will put pressure on traditional forms of state sovereignty. The future, then, will be unlike the past. That much – to me, at least – seems beyond question. The more interesting subject, though, is whether we will be able to predict – from where and when we now are, with the technologies and histories we now inhabit – what that future will look like. Liav Orgad, in his lead essay, offers us a compelling – and profoundly optimistic – vision of one possible future. In that future, our current world of sovereignty, in which human rights are nested in territorially limited sovereign states, is supplemented by a pluralistic and polycentric network of voluntary communities, mediated by information technology based upon self-sovereign forms of digital identity. The notion of global citizenship, in that world, might move from useful metaphor to lived reality; we could, at last, inhabit a world of our own choosing – a world in which, as Francesca Strumia adds, we might join new worlds while never leaving home.

It is my lot, in these debates, to provide reasons to worry. I want to highlight and describe problems that stand in the way of moving from where we are now to where Orgad thinks we might soon be. I want to present these worries, not as permanent obstacles to the forms of life Orgad describes, but as problems we would have to solve before that world could be made real. The worries I describe stem from features of the state system that I think are poorly replicated in the world of cloud community and voluntary association; territorial states right now provide us with goods that cannot be provided by even the best systems of informational technology. To denigrate the importance of territorial states, in favour of these voluntaristic forms of association, might make things worse, rather than better.

I follow the lead of Rainer Bauböck, who notes the ways in which diversity of thought might be placed at risk in voluntary association, and Robert Post, who argues that the power of the state to punish cannot be replicated by a virtual and voluntary community. My own challenge is broader: the protection of human rights, I believe, can only be accomplished by means of violence and force, in both policing and in punishment – and this violence is in our world reserved (as a matter of right, if not reality) for use by states. Orgad's polycentric vision, in other words, must either acknowledge the continued relevance of the state system, and provide space for the preservation and maintenance of that system – or it must provide us with the resources to move beyond that system, by showing how violence might be rightly used by dispersed forms of intentional community. What I think cannot be done – or, at any rate, cannot be done easily – is to insist that informational technology has fundamentally transformed political reality, in the world in which we live. It might do so, of course; but I do not think it has done so yet – and there is a great deal of work to do, for philosophers and politicians alike, before that transformed world is open to us.

To see this, we might begin by looking at the notion of a failed state. What does such a state look like? A failed state, in the first instance, involves the absence of a political community sufficient to provide the means of survival; food, shelter, water, and so on.[1] But the state rarely actually provides these goods itself; we do not expect the government to actually deliver us food and water, unless circumstances (or that government) have become very dire. What the state provides, instead, is coercion – coercion directed, in the first instance, at those people who would steal our food or water; at people who would break contracts with us as regards our labour; and so on. A state fails when it fails to provide the coercive means needed to preserve these liberties – or, on a broader vision of failure, when it sometimes provides the means of survival, and sometimes refrains from doing so.[2]

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[1] Rotberg, R. I. (ed.) (2003), *When States Fail: Causes and Consequences*. Princeton: Princeton University Press.

[2] Easterly, W. R. (2002), *The Elusive Quest for Growth*. Cambridge: MIT Press.

This is, to be sure, a minimal account of what a state must do; but it is already instructive. We should note, to begin with, that the use of coercion by the state is not here an optional part of its toolkit; coercion – which is to say, violence – is required of any state that is doing the job of the state. The second thing to note is that a great deal of political philosophy amounts to understanding what particular forms of violence might be justified specifically to the people gathered together within the coercive grasp of the state.[3] Most of us, after all, regard the state as having a duty to do more than avoid failure; it has to be *just* in how it deploys these coercive powers that make it distinct. The state must, therefore, do justice to those people over whom it claims the power of rightful coercion. The final thing to note is that the state is supposed to be capable of offering, in any particular dispute about what justice demands, something very much like finality. Once the state has decided some matter of controversy, it is entitled to insist that its determination shall be non-optional for the political community over which it rules.[4]

Why, though, is any of this relevant to our discussion of blockchain and cloud community? It is relevant, I think, because of how our most important rights are linked to the state's use of violence. Our human rights are conceptually linked to violence; Hannah Arendt's often-cited 'right to have rights' demands the existence of an agency that will deploy force against those who would presume to deny or trespass on those rights.[5] Our civil rights, too, are conceptually linked with violence; the reason I have the right to vote in the United States and not France, goes the argument, is that the law of the United States – and not France – gets to order me around, and to coerce me if I resist. This sort of coercion, though, is unavailable to even the most robust and well-developed forms of virtual association. We have, I think, very little sense of what it would be for them to have such coercive rights; and we have some good reason to worry that a world in which they had such rights might be a bad one indeed.

We can use these thoughts to develop some more specific worries about the examples used by Orgad in his essay. Take the notion of political participation in a virtual political community. Orgad suggests that such communities would form valuable spaces for political negotiation. I agree – so long as we are aware that such communities are *political* in only a secondary and derivative sense. The political community of the United States must engage in discourse whose aim is to determine what sorts of things the law of the United States shall do. This sort of political community is, I think, political in a *primary* sense; if the discourse were to stop, the justice of coercive law in the United States would necessarily cease. Other forms of political association, though, are political communities only in a *secondary* sense. If they were to cease their discussions, the world of discourse would likely be impoverished; but the justice of United States legal determinations, for example, would not be automatically placed into doubt. I think we might usefully call the United States' citizenry, and Amnesty International, political associations; certainly, they both seem associative, and they both seem political. But the two are distinct in how they relate to violence. The United States uses violence. Amnesty International offers *criticism about how that violence is used*. The latter sort of political community, in short, could not even in principle replace the former. It might make the political deliberations in the former more robust, and more likely to do justice. (Certainly, a world without Amnesty International would likely have worse states in it than our own world.) But the virtual political community cannot do the job of the state's political community. The fact that we can use the phrasing of *political community* in both contexts should not obscure the vast differences between the two sorts of human association.

I would suggest that something similar might be felt about blockchain cryptography, which produces self-sovereign forms of identification. These forms of identification are *sovereign,* in that

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[3] Rawls, J. (1989), *Political Liberalism*. New York: Columbia University Press.

[4] Hart, H. L. A. (1961), *The Concept of Law*. Oxford: Clarendon Press.

[5] Arendt, H. (1994 [1951]), *The Origins of Totalitarianism*. New York: Harcourt.

they are initiated with and controllable by the individual; but the individual has no greater *sovereignty*, in the sense used in international law, after her digital ID than before it. What the digital ID would provide, after all, is information. Information, we say, is power; but so too is, well, power, in the ordinary sense in which states use military might to preserve their sovereignty. What is required for rights to be protected, following on our discussion above, is a set of powerful agents willing to deploy violence against those who would do violence against us. The digital ID might be used to frustrate some forms of malignant state action – and, of course, allow others. What it cannot do is provide the violence that is conceptually linked with our human rights. If one is not possessed of a state willing and able to use violence on one's behalf prior to the digital ID, one is not provided with one once that ID is created.

I suspect similar things might be said of the Estonian experiment. People have long been able to engage in contracts with foreign companies, and foreign states, for particular ends; we engage in international trade, we accept particular patterns of dispute resolution, we agree to the terms limiting our rights as foreign visitors, and so on. It is not clear what, in particular, changes with the creation of a computer system capable of centralising and administering our dealings with a foreign state. I am open to being convinced otherwise, but my initial reaction is that registering as an e-Estonian no more makes me Estonian than changing planes at Heathrow makes me British. The Estonian state has obligations to its own citizens that it does not – or, at least, does not yet – have to me. So long as the e-Estonian system leaves that fact fundamentally unchanged, it is not clear to me that the virtual association it creates is even a pale shadow of a genuine political community.

All this, I should repeat, is intended not to defeat Orgad's vision, but to outline what I take to be significant worries about how we might make that vision real. Orgad does not want these voluntary forms of transnational institution to take the place of states, but insists upon their validity and power as 'state-like entities.' It is this latter point with which I take issue. If these institutions are to become genuinely state-like, they must have some part in doing what it is that states do; and we must understand how they could do that sort of thing, and how we could move from where we are to where we might be. If, in contrast, these institutions are merely places for debate and for the creation of solidarity, then we have had them for a very long time indeed; Amnesty International has been helped by the digital revolution, but had a life prior to that revolution. It is not clear what these tools provide us with except for scale and ease. Either way, I suggest, we have some work to do. Orgad is, I believe, well-positioned to help with this work; as I noted at the beginning, his vision is profoundly hopeful, while my own is not, and I genuinely hope I can be proven wrong.

A World Wide Web of Citizenship

Peter J. Spiro[*]

Liav Orgad offers a characteristically insightful and provocative speculation on how novel technologies will facilitate global citizenship. Global interconnectedness is transforming individual identity composites to include transnational elements, and the migration of identity is, as Orgad argues, establishing more pervasive understandings of global responsibility. Along these three dimensions of interconnectedness, identity, and responsibility, we are assimilating an understanding of global citizenship. A recent worldwide poll[1] found that a majority of respondents consider themselves more global citizens than citizens of their own countries.

Orgad is also to be congratulated for identifying the citizenship-related possibilities of blockchain technologies, which might further enable that sense of global identity. Blockchain could deliver a formal identity detached from national citizenship and sovereign control. Indeed, a blockchain identity could plausibly displace the passport as the standard form of identification in the same way that Bitcoin might plausibly displace national currencies. So long as it were insulated from the surveillance capacities of states and powerful non-state actors, a blockchain ID might enhance individual autonomies on a global landscape.

I am less taken by the concept of cloud communities as such. The internet facilitates the making of transnational and non-state communities, but for the most part these are communities that exist on the ground. Eliminating friction in long-distance global communication, the web enables connectedness among individuals who might otherwise maintain only thin or even non-existent ties. This is the case with almost all real-space identities that are not based on territorial location. The Web collapses location, allowing territorially dispersed communities to establish dense networks.

True, some communities exist only or primarily on the web. The community of video gamers, for example, is mostly an online identity, constituting (perhaps) a genuine cloud community. But even as our online selves become more prominent in our everyday lives, they are now and will be for the foreseeable future only a slice of our identity composites. (Remember Second Life?) There is also the interesting phenomenon of e-residence as innovated by Estonia. But that 'residence' doesn't represent community, even in its virtual sense; really, the label is misplaced. No sense of solidarity is likely to flow from e-citizenship in that form any more than individuals with bank accounts in the Cayman Islands compose a community on that basis. It's a market convenience and little more.

The false dichotomies of political community

Of course, one way in which the web facilitates communities is as a vehicle for community self-governance and in turn, global self-governance. Almost all communities are political. In this respect, I would part ways with the dichotomization of political, state-based communities and civil society that appears in other contributions to this forum (Rainer Bauböck's and Robert Post's in particular). At the very least, it is a continuum rather than a binary. The web will as a general matter enhance transparency. The web allows voices to be heard. No organisation, community, identity group, or movement can be governed in an insulated, top-down fashion.

So the web (more so than cloud communities as such) is already enhancing self-governance. It will not solve the problem of unequal representation. As Orgad notes, the international system continues

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[1] 'Identity 2016: "Global citizenship" rising, poll suggests', *BBC News*, 28 April 2016, available at http://www.bbc.com/news/world-36139904

formally to work from the principle of sovereign, not individual, equality, so that the citizen of San Marino has much greater clout than the citizen of China, both countries having one vote in international institutions but San Marino having many fewer citizens deciding how that vote will be cast. It's an extreme departure from the one person, one vote benchmark of democratic governance. But sovereign equality masks vast power disparities that in many pairings will more than compensate for inequality at the level of the individual. The citizen of China may be one of almost one and a half billion, the citizen of San Marino, one of thirty thousand, but China's global heft surely gives its citizens a more powerful voice (however measured) than those of its pipsqueak counterpart.

The web does help level the playing field against state power generally. In that sense the web may mitigate political inequality. Global governance is not the sole preserve of state representatives, as Orgad appears to have it; non-state communities are exercising increasing powers, formal or not, at the international level. The web supplies an important channel of global influence that does not institutionally favour state-based communities (it may even disadvantage them, insofar as bureaucracy inhibits technological adaptation). That translates into greater global self-governance capacities, and a redistribution of power away from states. The citizen of San Marino who is an environmentalist, who has an LGBTQ identification, or for that matter is a Catholic has alternate vehicles of representation at the global level, and those vehicles are empowered by the revolution in global communications.

But inequalities will persist, even if they are redistributed. I agree with Bauböck that Orgad's implication of a world federalism based on blockchain equality present an improbable prospect. In this respect, the technology does not answer standing objections to one-person, one-vote at the global level. Cloud communities, such as they exist, will themselves operate on the basis of internal formal equality in limited contexts only.

Corroded Leviathan

The corrosion of state power, meanwhile, will accelerate. Francesca Strumia articulates a new question, 'why am I a citizen of this nation-state?' That question has new salience, most dramatically with the rise of investor and other forms of instrumental citizenship. But it also begs the question, 'why should I care that I am a citizen of this (or that) nation-state?' It is no doubt true that possessing a premium passport expands life opportunities.[2] But within the universe of developed states, the question is not so obviously answered. There are inevitable spatial elements to our physical existence that are best governed through territorially delimited community, but those necessities need not be addressed at the level of the state. Many are better addressed at the subnational level, with respect to which 'voting with your feet' is practicable as a preference-sorting mechanism into 'like-minded sets', in Bauböck's formulation.

This gives the lie to the other misplaced critique of cloud communities, that they are voluntary and monolithic where states are involuntary and diverse. Here again, a descriptive spectrum is more appropriate than an artificial binary. It is true of course that most individuals are born into the states of which they will remain members (at the same time that a growing number change nationality after birth). But many are effectively born into non-state communities as well. Religion supplies an obvious example. In some contexts, the exit costs – perhaps a better metric than voluntariness – of leaving a religious community[3] are higher than leaving a state-based one. Communities based on race, ethnicity, and sexual orientation are more or less involuntary. They can also be remarkably diverse, sometimes more so than state-based communities. The Catholic Church represents a more diverse constituency

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[2] The Henley & Partners – Kochenov Quality of Nationality Index, available at https://www.henleyglobal.com/quality-of-nationality/

[3] 'Off the path of Orthodoxy', *The New Yorker*, 31 July 2015, available at https://www.newyorker.com/news/news-desk/off-the-path-of-orthodoxy

than does Austria, for example, and its internal dynamics surely implicate politics in any but the most formalistic definition of the term.

I understand the liberal nationalist tendency to lament the corrosion of state-based communities. There was a time (the latter half of the twentieth century) when the state impressively if imperfectly delivered on redistributionist solidarities. But wishing a return to that era is starting to look somewhat sentimental. States are powerful beasts, as Bauböck observes. They will linger in the way of other once-dominant legacy institutions (think the Holy Roman Empire). But they are clearly in crisis, and it seems unlikely that we will be able to re-right the ship to its formerly commendable course.

In the meantime, we should be setting our sights on making the new world a better one than it might otherwise be. They are many dystopian possibilities (some of them almost apocalyptic) if the state collapses and other locations of power replace it. Wishing the resurrection of the state will do us no good to the extent that the state can't withstand material developments on the ground. A necessary first step will be to map the new institutional landscape, of which cloud communities will clearly be a part.

Citizenship Forecast: Partly Cloudy with Chances of Algorithms

Costica Dumbrava[*]

In his thought-provoking kick-off contribution, Liav Orgad enthusiastically embraces the idea of a global digital citizenship that could remedy some of the deficiencies of the present system of territorial national citizenships and, potentially, transform the meaning of democratic citizenship. Technologies such as blockchain could allow people to create virtual communities based on shared interests and sustained by instantaneous consent, beyond the reach of nosy governments and regardless of national borders. By widening access to rights, expanding political voice and creating more secure and diverse identities, digital citizenship could address current challenges related to the imperfect attribution of status and rights (statelessness, disenfranchisement), widespread political apathy among citizens and artificial divisions created by national borders. To paraphrase the text of a famous cartoon: 'on the internet nobody knows you are a foreigner'.

Other contributors to this forum have pointed out several important tensions and dangers lurking in Orgad's proposal. Rainer Bauböck worries that replacing political communities, which are based largely on ascribed but equal citizenship, with freely chosen cloud communities would be 'fatal for democracy'. Purely consensual political communities cannot work because political associations need coercive systems capable to enforce laws. As 'exit-based conflict resolution systems' (Primavera De Filippi), virtual communities are too volatile to ensure stable membership and commitment to rules. They are also ill equipped to do the policing and punishing required by political organisation (Robert Post, Michael Blake). Orgad's cloud communities could be seen instead as akin to civil society organisations. As novel forms of coagulating solidarity, interests and identities, they can be instrumental for checking, challenging or complementing governments, but they have neither the means, nor the legitimacy to replace democratic citizenship.

I agree that technologies may offer surprising opportunities for improving and reimagining our social and political life (Francesca Strumia, Peter Spiro). Information and communication technologies already offer to some people better access to legal status (digital IDs), allowing them to participate more effectively in political deliberations and decision making (e-forums, e-voting), to mobilise against authoritarian regimes (twitter revolutions) and to transcend borders in order to engage with communities of origin (diaspora politics).[1] Using powerful computers, myriads of sensors and sophisticated algorithms, 'smart cities' can identify and address public issues and concerns, such as traffic congestions and security threats. However, I worry that we too often take technologies for granted and fail to discern between technological opportunity and mythology.

My contribution to this debate is to raise two general points about the risks involved by linking citizenship to technology, namely making citizenship vulnerable to biases and failures that typically affect technology and increasing citizenship's dependence on technology.

Technologies are not neutral. They are embedded in and tend to reinforce certain values, norms and expectations to the detriment of others. For example, predictive algorithms used by police are more likely to identify black persons as suspects of crime[2] and facial recognition software seems to

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[1] Dumbrava, C. (2017), 'Citizenship and Technology', in Shachar, A., R. Bauböck, I. Bloemraad & M. Vink (eds.), *Oxford Handbook of Citizenship*, 767-788. Oxford: Oxford University Press.

[2] 'Big data may be reinforcing racial bias in the criminal justice system', *The Washington Post*, 10 February 2017, available at https://www.washingtonpost.com/opinions/big-data-may-be-reinforcing-racial-bias-in-the-criminal-justice-system/2017/02/10/d63de518-ee3a-11e6-9973-c5efb7ccfb0d_story.html?utm_term=.5513fe110740

recognise better white male faces.[3] When they are not biased by design, smart technologies may quickly pick up biases from their surroundings. In 2016, Microsoft created Tay, a chatbot that used machine learning to emulate a teenage user on Twitter. However, after a few hours of 'learning' on the social media platform Tay began posting Hitler-praising and other racist and sexist remarks[4], which forced Microsoft to shut it down with an apology. Bitcoin, the most well-known blockchain technology, can also be regarded as deeply political, a product of particular 'right-wing, liberation, anti-government politics.'[5] Such ideological bias makes blockchain unsuitable for becoming the repository of democratic citizenship. If the platform itself is biased towards a particular conception of the good, how can we expect it to serve as an arena and mediator between different conceptions of the good?

Technologies often fall short of expectations and are usually hijacked, if not initiated, by authoritarian governments and powerful groups. For example, India's population biometric database, Aadhaar, which is intended to provide more than a billion people with digital identities and access to public services, has been criticised for its rigidity and security problems, which affect particularly the poor.[6] The Chinese government is currently toying with a Social Credit System[7] designed to measure citizens' trustworthiness that would further mould their behaviour to align it with the government's priorities and ideology. Blockchain gurus and their followers claim that this technology is highly secure. However, this has not prevented a hacker to steal about 60 million USD - worth Ether (another major cryptocurrency) in the so-called DAO attack.[8] Indicative of the ideological underpinning of the blockchain movement, and deeply troubling from many perspectives of social justice, is that some members of the cryptocurrency community suggested that the attacker should keep the money as s/he did not break the rules but simply exploited a flaw in the system.

As other products of digital technologies, the blockchain exists in online clouds that depend on critical physical infrastructures. Online clouds are no less fragile than on-the-sky clouds. Online systems are emanations of a bunch of machines connected to various grids that require an awful lot of things, such as electricity, computers, data centres, internet servers, etc. Since this enabling infrastructure is vulnerable to hacking and shutdown, so is democratic citizenship if embedded in digital technologies. If digital identities could be compromised (as in the Indian case) and cryptocurrency stolen there is little assurance that digital citizenship solutions, such as universal IDs, e-voting systems and blockchain-based cloud communities, would not succumb to the same illness.

My second point is about the risk of making citizenship (too) dependent on technology. As we regularly worry about our children's addiction to tablets, online gaming and other technologies that could affect their social development, we should also worry about our society's dependence on technologies that might affect its capacity for self-government. It is not only about a technologically

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[3]   'Facial recognition software is biased towards white men, researcher finds', *The Verge*, 11 February 2018, available at https://www.theverge.com/2018/2/11/17001218/facial-recognition-software-accuracy-technology-mit-white-men-black-women-error

[4]   'Microsoft's disastrous Tay experiment shows the hidden dangers of AI', *QUARTZ*, 2 April 2016, available at https://qz.com/646825/microsofts-ai-millennial-chatbot-became-a-racist-jerk-after-less-than-a-day-on-twitter/https://qz.com/653084/microsofts-disastrous-tay-experiment-shows-the-hidden-dangers-of-ai/

[5]   Golumbia, D. (2015), 'Bitcoin as Politics: Distributed Right-Wing Extremism', in G. Lovink, N. Tkacz & P. de Vries (eds.), *MoneyLab reader: An intervention in digital economy*, 118–31. Amsterdam: Institute of Network Cultures.

[6]   'In Rajasthan, there is "unrest at the ration shop" because of error-ridden Aadhaar', *Scroll.in*, 14 April 2018, available at http://scroll.in/article/805909/in-rajasthan-there-is-unrest-at-the-ration-shop-because-of-error-ridden-aadhaar

[7]   'Big data meets Big Brother as China moves to rate its citizens', *Wired*, 21 October 2017, available at http://www.wired.co.uk/article/chinese-government-social-credit-score-privacy-invasion

[8]   Reijers, W., F. O'Brolcháin & P. Haynes (2016), 'Governance in Blockchain Technologies & Social Contract Theories', *Ledger* 1 (1): 134-151.

mediated withdrawal of citizens from the physical public space, *á la Putnam*,[9] but also about the dangers of making democratic citizenship dependent on specific technological systems and artefacts.

Exercising citizenship has always involved some forms of technology, from voting pebbles in Ancient Greece to ballot boxes and electoral districting algorithms[10] in modern representative democracies. However, the high levels of sophistication and, ultimately, opaqueness of technologies such as blockchain must be a real concern should we decide to entrust these technologies with the role of embodying democratic self-government. We are asked to take for granted the promises of new digital technologies and are kindly invited to take our places in shiny new cloud communities. However, we rarely understand how these technologies work, who designs and oversees them and whether we would be able to dispense of them if we find them wanting.

Some religions tell you that the true God is in the clouds; tech enthusiasts tell you that the true community is in the cloud. I recommend examining the sky carefully before you start packing.

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[9] Putnam, R. D. (2000), Bowling Alone: The Collapse and Revival of American Community. New York: Simon & Schuster.

[10] 'Of the Algorithms, by the Algorithms, for the Algorithms', *Slate*, 13 January 2009, available at http://www.slate.com/articles/news_and_politics/politics/2009/01/of_the_algorithms_by_the_algorithms_for_the_algorit hms.html

The Separation of Territory and State: a Digital French Revolution?

Yussef Al Tamimi[*]

The contributions on cloud communities and citizenship in this blog raise both hopes and fears. The reality of an idea initially as outlandish as citizens of a digital cloud is materialising as we ponder and debate its practices. Political theory and the law must attempt to keep up with these rapidly changing circumstances. This comment raises some questions regarding three assumptions in this debate:

1. Cloud states[1] have no **territory**
2. Cloud states cannot exert **violence**
3. Cloud state membership is based on **choice**

To illustrate and perhaps formulate a response to these assumptions, it might benefit this futuristic debate to consult experiences from the past. As suggested by the other contributors, the current transformation of the state as a consequence of the 'digital revolution' is profound. Nothing less than a separation of the state from its traditional connectedness to territory is suggested. The historic event that comes close to matching such a seismic shift in the structure of the state was the American and French Revolutions, which set in motion the institutional untying of state and church. A historical parallel is quickly drawn: if these revolutions led to the *separation of Church and State* that resulted in secular states, will the digital revolution lead to the *separation of Territory and State* that results in cloud states?

Assumption 1: Cloud states have no territory

Robert Post, focusing on legislation in his blog post, argues: 'A world in which every community is voluntary is a world in which every norm is also voluntary. It is therefore a world without law. Because politics is the social form by which we create law, it is also a world without politics.'

For Post, a cloud state, which does not impose legislation, is not a state at all. One can imagine that arguments sounding very similar were once raised by opponents of the separation of Church and State: 'a secular, neutral state, which does not impose public morals, is not a state at all.' I raise this parallel not to disagree with Post. Rather, it is to show that after centuries of debate on secularism we have come to understand that 'neutrality' of the state is an impossibility; a state always makes choices that impact a state's public sphere. That is to say that the opponents of the separation of Church and State were wrong in the first place because the starting premise of their critique, that the secular state would be neutral, was incorrect.

The starting premise of the cloud state is that it is nonterritorial. Now that we have come to know that 'neutrality' does not really exist, the question arises if we have to conclude that 'nonterritorial clouds' do not really exist either. In other words, *is the cloud itself not territory?* I do not mean this in the strict physical sense that clouds have servers that are located in territorial states, which itself is a valid point; yet the development of serverless cloud computing in the future might undermine such an

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[1]   I use the term 'cloud state' rather than 'cloud community', as the latter unnecessarily obscures the fact that, at least in this debate, the question is whether clouds can fulfill certain political functions traditionally belonging to the state, such as conferring citizenship. Assuming that these political functions can indeed be performed by clouds, this leaves no reason to call a cloud anything else than a 'state', except to dissociate the cloud from the negative connotations of the state and calling it by the more cozy term community. However, in my opinion, one should not appropriate the political function of the traditional state and simultaneously obscure the responsibility – which states sometimes fail to exercise – that is inherent to that function.

argument. To think of the cloud as somehow territory-less and border-less is incongruous if one appreciates that territory itself is not a natural phenomenon but a man-made construct the meaning of which is dynamic and can come to encompass non-physical spaces.

Assumption 2: Cloud states cannot exert violence

Focusing on violence in his comment, Michael Blake states: 'My own challenge is broader: the protection of human rights, I believe, can only be accomplished by means of violence and force, in both policing and in punishment – and this violence is in our world reserved (as a matter of right, if not reality) for use by states.'

Blake argues that cloud states cannot protect human rights. A comparison with anti-separationists in the French Revolution is again not far away: they would claim that 'secular states cannot protect God's law'. To make his argument, Blake relies heavily on state force. But why could cloud states not impose their own forms of digital violence? Perhaps an obvious damage they could inflict is to one's reputation. An example of this is the social credit system proposed by the Chinese government, which is a national reputation system that assigns social credit to citizens. The flipside of such reputation systems that aim to promote 'good citizenship' behaviour is the potential social devaluation of 'bad' citizens, which can go as far as seriously harming their wellbeing and possibilities in life. A punishment in terms of such social devaluation imposed by the cloud state is conceivably more painful and restricting to the individual than traditional methods of punishment, such as fines or jail.

As with territory, one could counter this claim by saying that what matters for statehood is physical, rather than non-physical, violence. In that case, the actual core of the matter is the physicality of the traditional state's territory and violence compared to the non-physicality of the cloud state's territory and violence. That raises a question that is yet to be addressed by proponents of cloud states: What is desirable about the non-physicality of territory and violence that makes cloud states and their citizenship superior to traditional states and their citizenship?

Assumption 3: Cloud state membership is based on choice

Focusing on the idea of consent-based cloud communities, Rainer Bauböck writes: 'My response is that this would be fatal for democracy. Already Aristotle knew that, unlike families, democratic polities are associations of diverse individuals. The territorial bases and automatic attribution mechanisms of citizenship create political community among individuals that differ profoundly in their interests, identities and ideas about the common good.'

In short, for Bauböck choice cannot be constitutive for political membership (citizenship). Hence, the chosen membership of cloud states is not citizenship. This is a difficult topic, and the parallel with the earlier (French) revolution escapes me. The reason for this is that in the secular revolution separating Church and State the 'onus' of choice fell on the Church and not the State: It was religion and the freedom to choose individually one's religion that was guaranteed by the secular state. By contrast, in the digital revolution separating Territory and State the opening up of choice is focused on the newfound states among which individuals can choose. In fact, one might even be limited in exiting from a territory (think refugees, political activists) yet have the freedom to select from a range of cloud states one wants to join.

Yet, the notions of choice and voluntariness applied in this context leave many questions unanswered. It is still unclear in what way we understand membership in a cloud state to be a 'choice'. The Chinese social credit system mentioned earlier may become mandatory as of 2020. Such a turn towards explicitly mandatory membership will probably not always happen, but what idea of choice do we have in mind when saying that cloud membership is a 'choice'? Is it rational choice theory, which has long been refuted in psychology? The conditions that move people to decide on their cyber

membership, as well as their non-rational motivations, have to be taken into account for a more realistic conception of choice.

The question of chosen membership is closely related to issues concerning identity. The idea that individuals are able to 'create' their own identities, which is implicit in Liav Orgad's contribution, is mistaken. Iris Marion Young makes a helpful distinction between associations and social groups to tease out the distinct role of identity when membership is based on choice. Young argues that that the contract model of society applies to associations but not to social groups: 'Individuals constitute associations; they come together *as already formed persons* and set them up, establishing rules, positions, and offices.' (my emphasis).[2] In contrast, social groups, in which our identities are implicated, involve a much more complex process: 'Group affinity (…) has the character of (…) "thrownness": one finds oneself as a member of a group, whose existence and relations one experiences as always already having been.' This does not mean that one cannot change one's group affinity, for example by changing one's gender identity as trans-persons do. For Young, these cases illustrate thrownness precisely because such changes are 'experienced as a transformation in one's identity.' This phenomenological approach to social groups shows that a deeper affinity is involved in the process of membership and that social groups, which implicate our identity, cannot be explained solely by 'choice'. Young and Bauböck therefore agree that citizenship and choice are irreconcilable, though they do so from different standpoints: for Bauböck the presence of choice in communities leads to a democratic deficit, for Young it leads to a social deficit, a lack of social affinity or belonging. To respond to this complex debate relating to membership, the nature of cloud membership requires further clarification as to its position on citizenship, identity and choice.

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[2]   Young, I. M. (1989), 'Polity and Group Difference: A Critique of the Ideal of Universal Citizenship', *Ethics* 99: 250-274, at 260.

A Brave New Dawn?
Digital Cakes, Cloudy Governance and Citizenship á la Carte

Jelena Dzankic*

I have always been fascinated by the human capacity to imagine future worlds and describe what humanity would look like in the years or decades ahead. In the second half of the nineteenth century, Jules Verne wrote about electricity, submarines and flying balloons. A few decades later, Thea von Harbou and Fritz Lang gave birth to the world of *Metropolis,* which in many ways is a metaphor of contemporary societies. In the 1970s and 1980s, Isaac Asimov wrote about psychohistory, a discipline that combines statistics, psychology and history to predict how the behaviour of large groups would shape future events. Just as most of the things described by Verne, von Harbou and Lang, or Asimov seemed technologically and politically distant or unimaginable at their times, so do meaningful digital communities seem to be today.

Liav Orgad sees tremendous potential in digital technologies for reconstructing the traditional notion of citizenship by shifting status, identity and the exercise of rights away from the state and closer to the individual. He believes that blockchain could enhance the current structure of international governance by strengthening human rights through the attribution of digital identities and by offering new models for political participation through cloud communities, which in turn would decrease the inequality engrained in, for instance, the principles of voting in the United Nations. In other words, with further development of blockchain technologies, states would no longer be the sole determinants of an individual's legal status, or have the monopoly over the exercise of individual rights, or be the core community for identity ascription. In this sense, I am in agreement with Orgad, Primavera De Filippi and Francesca Strumia that we cannot but acknowledge that rapidly developing technologies are likely to 'outsource' many of the state's functions to cyberspace. Even so, as has been pointed out by other contributors (Rainer Bauböck, Robert Post, Michael Blake and Peter Spiro), blockchain technologies and cloud communities raise a number of concerns about governability and the exercise of self-sovereignty.

They want citizenship? Let them have digital identities instead!

In his kick-off contribution Orgad highlights that 1.1 billion people, or a sixth of the global population lack an official identification. Such people, including many refugees, displaced persons, nomadic pastoralists or socially marginalised minorities like the Roma are consequently excluded from participating in or accessing services of modern states. According to Orgad, blockchain technologies already provide the infrastructure for attributing such people global digital IDs, which would grant them recognition as 'human beings'. Blockchain-based digital IDs would enable individuals to create and register their own identity. This identity would be validated through multiple decentralised network nodes. It would also be permanent and immutable.

I agree with the general need to recognise every human being before the law. However, the attribution of a global digital ID scarcely resolves this problem for two reasons. The first one is recognition. Our legal status is attributed by states recognising us as legal persons. The international system of mutual recognition among states allows us to be considered a legal persona elsewhere precisely because the status that we have has been confirmed by a state. Hence, any global digital ID would still need to be recognised by states or an international organisation in order to have external

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validity. Initiatives, such as ID2020[1] speak about the need to tackle the problem of the lack of 'officially recognised identity' through digital technology but offer scarcely any practical pointers as to how these identities would be recognised and by whom. Furthermore, if such digital identification were to create a 'status and identity *complementary* to national citizenships', I am wondering what kind of status and rights it would yield for those whose predicament Orgad seeks to resolve. If a digital ID has no external recognition, it has little value for a person with no other proof of identity. They will still lack the status that a digital identity could complement but cannot substitute for. Isn't the offer of digital identity for them a bit like Marie Antoinette's cake for the hungry crowds in revolutionary Paris?

Governance by blockchain: digital hierarchies or direct democracy?

Orgad's second claim looks prima facie stronger. Recent experiments with blockchain-based virtual communities, such as Bitnation, indicate that blockchain technology has the potential to substitute or complement some elements of state governance. In theory, in a blockchain-based cloud community, members agree on a set of laws regulating their interaction, and these laws are then amended by consensus.

Pazaitis, De Filippi and Kostakis give the example of Backfeed (http://backfeed.cc/) protocol as a conceptual model 'for a new form of governance with an incentivisation system implemented on the blockchain.'[2] This system would be materialised through an organisational structure of decentralised cooperation based on peer-to-peer evaluation and a reputation system as grounds for allocating communal influence. This kind of cooperation would presume that a number of members come together to establish a digital community and reach a consensus on what values underpin that community. Members of the community own certain initial amounts of 'reputation' tokens and they are incentivised to participate in communal decisions through a system that provides reputational gains to those who are best aligned with communal values. Those contributing voluntarily to 'values' receive a reward if 50 per cent of the tokens representing the community's reputation have been invested in the evaluation of the voluntary contribution. The reward takes the form of reputation tokens, which are shared between the contributor and those who reached the consensus on the evaluation. Whenever a person evaluates a new contribution, they also give away some of their existing reputation to it.

Let's translate this into a thought experiment. Imagine there is a Backfeed-based community called Scientia, in which the core value were 'knowledge'. Scientia has been created by five members (A, B, C, D, and E), each of whom originally had 10 reputation tokens (i.e., the community has a total of 50 tokens). Member A comes up with a proposal to create an encyclopaedia of cloud communities and the proposal is put to communal vote. Votes can range from 1 to 5 (1 lowest contribution, 5 highest contribution). The proposal will go through if at least 25 reputation tokens have been invested in the evaluation.

Now, imagine a scenario where A invests 8 out of her initial 10 reputation tokens with a vote of 5; B invests 5 tokens with a vote of 5; C invests 3 tokens with a vote of 3; D invests 5 tokens with a vote of 4; E invests 7 tokens with a vote of 5. A total of 28 tokens have been invested, with three contributors voting 5, and hence the proposal is accepted. C and D will lose the 8 tokens they invested, and these will be distributed between A (4 tokens), B (3 tokens), and E (1 token) in line with their

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[1] ID2020 *Alliance at a Glance*, available at https://static1.squarespace.com/static/578015396a4963f7d4413498/t/5a5f92bcc8302548e722dff3/1519157409748/ID2020+Alliance+Doc+-+Jan+2018.pdf

[2] Pazaitis, A., P. De Filippi & V. Kostakis (2017), 'Blockchain and value systems in the sharing economy: The illustrative case of Backfeed', *Technological Forecasting and Social Change* 125: 105-115, at 111.

initial reputation investment. The new count of reputation tokens would be 14 for A, 13 for B, 7 for C, 5 for D, and 11 for E. In evaluating the subsequent proposal, A, B and E would have greater voting power, as they would hold three quarters of the community's reputation tokens.

In my view, there are three problems with this kind of decision-making. First, the 'overall evaluation of a specific contribution is based on the reputation score'.[3] This implies the use of a system of weighted voting, whereby individuals with higher reputation (i.e., with more tokens) have a greater say in communal decision-making. Paradoxically this would make the principles of deciding in such digital communities closer to those in ancient Rome, feudal Prussia, or French colonies where votes were weighted on grounds of 'wealth' than to contemporary democracies based on the equality of votes. In other words, this kind of system would perpetuate inequality of membership in a similar way as the Chinese social credit system described by Costica Dumbrava does. Second, even though the general idea of Backfeed-based governance is to incentivise participation through rewards, those with high rewards from previous rounds of evaluations may be less inclined to participate in new evaluations as that may result in their loss of reputation. Equally, 'losers' in the communal vote (such as the examples of C and D above) may face obstacles in putting forward or voting for any proposal due to limited resources at their disposal. Third, such a system could create incentives to bet with the winners rather than to invest into the values that one truly believes are in line with communal ones. This is antithetical to democracy and turns into a market where people pursue reputational gains instead of deliberating on what values they share. That is, a system in which reputation is gained and lost by 'betting' on the levels of contribution to communal value has the potential to create a stratified society in which decisions are made by a small number of those willing to speculate on communal value.

An alternative to this would be to think how direct democracy could work in cloud communities. Presumably, protocols could be developed that – unlike Backfeed – base decision-making on equal voting power for each digital identity and that offer a platform for deliberation rather than only for voting. Such communities would be similar to voluntary associations of individuals that adopt statutes providing for internally democratic governance: *all* members (independently of their duration of membership and place of residence) and members *only* can participate in decisions taken by the 'demos' of the association.

Now, let's go back to the example of Scientia. Imagine that this time, Scientia were a voluntary decentralised blockchain-based community that operates on the basis of equal votes of its members A, B, C, D, and E. The community votes on A's proposal for the encyclopaedia of cloud communities and the proposal passes due to positive votes of A, B, and E. Unlike in the previous example, since there are no reputational gains or losses, C and D will have the same voting power in the next ballot. Hence such a model would not disincentivise those who opposed the initiative. However, it would then not provide incentives for contributing in the future, as Backfeed is supposed to do. As Pazaitis, De Filippi and Kostakis rightly point out, this would lead to 'to the gradual dissipation of the community members, who could no longer reflect themselves into the value system of the new entity.'[4]

So there is a dilemma of blockchain governance in cloud communities: will they be based on incentives that create hierarchies or on direct democracy with scarce mechanisms for motivating participation?

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[3]   Above n. 1 at 110.

[4]   Ibid.

Citizenship as a business model?

In his kick-off contribution Orgad notes that the future of citizenship is dynamic and multi-layered. Yet so is the present, and so has been its past. The key question is whether we are ready to embrace a new approach to citizenship, based on 'smart contracts' operating in cyberspace and regulating needs of individuals, just as a business model would do. For Spiro the recent trend towards a global market for passports exemplifies such an approach to citizenship: individuals with multiple passports have more choice where to settle, pay taxes, send their children to school, etc. Hence, in some respects, citizenship (albeit for a small number of people who can benefit from investor citizenship programmes) is already merely an access point to a market of goods and services that different providers (in this case states) offer.

As new technologies develop, digital markets will allow individuals to choose the services previously provided by the state from private companies. Indeed, some functions of the state have already been outsourced to companies operating in the digital world (e.g., online education instead of public schooling, car-sharing schemes instead of public transport, etc.). Perhaps the utopian vision of the 'sharing economy' is that public goods would be produced through horizontal and voluntary cooperation among consumers. Yet examples such as online degrees, Airbnb, Uber, and the likes prove the contrary. They follow the logic of the market and reveal the huge potential for corporate power based on network effects and 'cartelisation' of services.[5] In considering the effects of citizenship as a business model, we also need to think about possible implications for some other core functions of the state, including adjudication and the provision of security.

And even if, in the spirit of the introductory paragraph, digital technologies bring along numerous benefits we have to recognise that their *á la carte* approach is hardly conducive to the creation of a community of shared values among members. That is, it is hardly conducive to citizenship.

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[5] Atzori, M. (2015), 'Blockchain technology and decentralized governance: Is the state still necessary?', available at SSRN: https://ssrn.com/abstract=2709713 or http://dx.doi.org/10.2139/ssrn.2709713

Old Divides, New Devices: Global Citizenship for Only Half of the World

Lea Ypi*

There is no doubt that we live in an age of global communication. But who is able to communicate and how is access to the means that enable that communication (computers, mobile phones, internet lines) distributed?

Consider again the facts of global interconnectedness with which Liav Orgad begins his piece. But consider them from a different perspective, not that of the wealthy Western academic who blogs about cloud communities. If half of the world population spends time online, it means that the other half does not. While 94 per cent of the youth population in the developed world has access to the internet, 70 per cent of youngsters in least developed countries do not. While almost one-third of the global population uses smartphones, the other two-thirds (the vast majority) does not. If global internet use in 2017 was at 48 per cent, 52 per cent of the world's population was left out. In the least developed countries only 15 per cent of households have access to the internet from their homes and 85 per cent rely on schools, offices, libraries or other public connections to access the web. The proportion of men using the internet is higher than the proportion of women, and the proportion of private internet access in developed countries is twice as high as in developing ones.[1]

All this suggests that the narrative of global interconnectedness on which the ideal of global citizenship rests is only half true and true only for half of the world. There is of course the claim that even for the half of the world that is connected, the technology might not work very well. There are the dangers of digital identities being stolen and of data centres, internet servers, and the rest of the infrastructure being vulnerable to hacking, as Dumbrava emphasises in his contribution. But my problem is even more basic. One of the most attractive features of global citizenship based on blockchain technologies seems to be that it does not entail the right to exclude. But either proponents of that ideal start with the world as it is, or they do not. If they take the world as it is, they endorse an even more pernicious form of exclusion, the exclusion of those who have no access to the internet from the community of those that do, and they proceed to reify the separation between the two. If they start with the world as it ought to be, they owe us an argument on how we can get from here to there. How can we make sure that the half of the world that has no access to the internet can do so? How are we going to take care of the costs of IT provision? What will put an end to the inequalities that make it the case that for some people (like me) mobile phones are an extension of themselves and for some others only an aspiration? Who controls the production of the tools that lead to differentiated access of the means of connection?

It will be clear from my lines above that I approach the question of global citizenship presented in Orgad's piece from a radical egalitarian perspective, concerned with inequalities of access to the material means of production, and the related power positions of those who control such access. In the contemporary world this means raising very basic questions, such as who owns Apple and Microsoft, and how we can make sure that everyone has a mobile phone that works as well in central London as it does in the remote areas of Albania (where it typically does not). Apple and Microsoft are the modern equivalents of cotton and spin factories. We have the same reasons to worry about who controls their ownership and who has access to the technologies that they enable as much now as we did in the past. But if we ignore the problem of asymmetrical access and proceed as if the internet was already within everybody's reach, we run the risk of entrenching one of the most problematic divides of our time.

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[1] International Telecommunications Union (2017), *ITU Facts and Figures.* Available at https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf

Given the perspective I have offered, I hesitate to show enthusiasm for Orgad's proposal for reasons very different from those of Robert Post, Michael Blake or even Rainer Bauböck. My argument is not that cloud communities based on voluntary membership do not offer the benefits of a collective coercive system of rewards and punishments like the one offered by modern states. I do not think that states are necessarily either more just or more democratic than cloud communities, or that they 'provide us with goods that cannot be provided by even the best systems of informational technology' as Michael Blake suggests. If you are a representative of the half of the world that has nothing to do with the internet you are of course failed by IT providers, but you are also failed by your state. Indeed, you are failed by those providers precisely *because* you are failed by your state. It is because the state is captured by powerful groups who merely exploit you and who are uninterested in guaranteeing you access to those basic goods that the state is supposed to guarantee (at least according to the liberal myth) that you are excluded within the state as much as outside.

When we assess the benefits and limitations of state citizenship versus a voluntary model of global citizenship, we have to make sure that we compare like with like. We have to make sure we don't compare an ideal of the state with the reality of failing blockchain technologies, for example. We need to compare the reality of the state with the reality of cloud communities or the ideal of the state with the ideal of cloud communities. Speaking about ideals, like Orgad, I am attracted to a system of voluntary membership where citizenship does not come coupled with the right to exclude, and like De Filippi I can see the advantages of '*trustless systems* (i.e. system where trust is no longer needed).' Indeed, both of those things are compatible with the kind of utopian society Marx thought would come after capitalism had been superseded and when the need for a state (understood as a collective coercive system of punishment) would have withered away. But speaking about reality, capitalism is alive and kicking: capitalist relations control the state and they will control cloud communities. Without remedying the asymmetries of access to the means of connection, and the exclusions they generate, the ideal of global citizenship will be as illusory as the ideal of a state that is effective in distributing social goods. But while in the case of the state, we have at least a history of political mobilisation and, if lucky, democratic learning processes and institutions on which to rely when seeking change (as Bauböck also points out in his piece), nothing of that sort is available in the cloud. So we should probably hold on to state citizenship for the conflictual period of transition and leave cloud communities to the future utopian society that may become accessible once interconnectedness is truly global. If it ever does.

Escapist Technology in the Service of Neo-Feudalism

Dimitry Kochenov [*]

This contribution agrees with Rainer Bauböck's reaction to Liav Orgad's opening statement. I am, too, 'less optimistic about the future of citizenship'. My reasons are different though. There are different ways to go about technological leaps: to turn technological breakthroughs into the tools of improving the long-established reality, or to revolutionize society based on technological advancements. Nikolai Fëdorov, to give an ambitious example, aimed at conquering death and resurrecting all those previously living.[1] Liav Orgad's text proposes technology-inspired change. I suggest, respectfully, that by not going far enough, what is proposed by Orgad could turn out to be dangerous and unwelcome for a large share of the world population outside of the richest countries. Echoing Lea Ypi's contribution, I suggest that it will do more harm than good. The reason for this is that it puts technology to the service of the mythology of citizenship, instead of interrogating citizenship's essence and functions and questioning its darker corners.

The core of the problem, to my mind, is the concept of citizenship as such, not the documentation of identity, which the blockchain proposal addresses. Virtual nations, as long as they replicate existing national structures that randomly ascribe strict identities and reinforce deep global inequalities, will make the world worse off, especially among its poorest half. Even if they miraculously end up playing a significant role, the citizenship framing of the issues Orgad aims to address seems to be unhelpful and problematic, especially in the context of his rhetoric aspiring to reach out to 'global' citizenship, whatever this could mean.

Citizenship is a racist and sexist status of randomised violent segregation of the world population into relatively closed groups of varying objective value from the point of view of individual rights.[2] Some come with far-reaching rights – others with liabilities. Both are significant both in real life and in the cloud. If someone is assigned a humiliating set of liabilities in real life, say, a Central African Republic citizenship, instead of a noble and democratic status boosting one's rights, say the citizenship of France, cloud communities will not change that, unless the distinction between being assigned to CAR as opposed to France is thereby undermined, and based on Orgad's suggestion it won't be. The 'real life' problem thus derives from real life inequalities between citizenships as bundles of rights and liabilities. It is not only that citizenships by definition exclude. It is the difference between different citizenships that matters. As long as these two premises persist in shaping our day-to-day reality, a 'global' cloud community is a meaningless proposition for those who hold inferior citizenships, reinforcing the gaps between CAR citizens and the French.

Citizenship's core function throughout history, alongside sexism and a deep exclusion of women, has been to establish and police global race- and wealth-based hierarchies of opportunities and rights, while providing an impenetrable and punishing noble façade of equality and self-determination. In this, citizenship has been very effective: it took US women almost hundred years to get the right to vote and the Dutch ones waited until 1986 to have a citizenship status independent of that of their husbands. Compared with women, all the colonial subjects fared significantly worse. While African Americans obviously have not been enjoying the same rights as 'Caucasian' US citizens throughout the history of US citizenship, the same is true for the European and Asian empires as well. Emmanuelle Saada explains how arbitrary and uniquely based on skin-colour the ascription of

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[1] Fëdorov, N. F. (1906), *Filosofija obshchego dela*. Moscow: Vernyj.

[2] Kochenov, D. (2019), *Citizenship: An Alchemist's Promise.* Michigan: MIT Press (forthcoming).

Frenchness in the colonies of the Republic was.[3] What decolonisation brought, however, was a racial segregation of the world under the banner of equal citizenship *among* equal states. All the former colonial subjects are now confined to the places around the world reserved uniquely for the losers of Ayelet Shachar's infamous birthright lottery.[4] The only difference compared with seventy years ago is that there is no more French judge in the former colony, whom you can beg for a drastic status upgrade for your child, capitalising on her unexpected blue eyes – racism is outlawed, remember?

The world has thus both changed and remained the same. It changed, because since the Second World War the Western world has come to accept women as the bearers of citizenship status independent of their sexual partners and even grants them political rights. Racial minorities within 'first world' states are also respected – both on paper and often in practice too. The façade of citizenship as a status of equals seems to have met – for the first time since its proclamation by Aristotle – its promise. Yet the world has also remained hugely unequal. Branko Milanovic teaches us that, although global income inequalities have recently declined when measured by country averages, country of residence is more important than class today.[5] Even the 'occupy Wall Street' guys belong in fact to the world's elites, they are only not able to realise the depth of misery of others. Indeed, those locked into the poorest former colonies do not inhabit the same narrative as Europeans and Americans. The main purpose of citizenship has been upgraded: from a neo-feudal mechanism of sexist and racist governance, it is turning into one of the core instruments of preservation and justification of global inequality, hiding its functionality behind the old façade of political self-determination, which had been effective to brush away women and minorities before.

Citizenships are thus about preserving inequality worldwide. As long as segregating remains citizenships' main function, cloud communities are powerless in their mission: identities are irrelevant as long as all the life chances or the lack thereof depend on a random legal status of ascription to authority distributed at birth. Worse still, humiliation and randomness are routinely sanctified: while upholding and perpetuating inequality, citizenship supplies a powerful and ultimately pointless narrative justifying random privilege through the glorification of expediency in territorial governance.

The lack of any rights worldwide coming with some citizenships as opposed to a huge bundle of rights coming with others can be measured. By comparing GDP, HDI, travel freedom and settlement and work rights abroad it is easy to see why being born French – with a status welcoming you to the job market of 41 countries and all the other perks included – is infinitely better than being a Ukrainian or, God forbid, an Afghani. The Quality of Nationality Index, which I designed together with Chris Kälin shows this in the most graphic way (http://www.nationalityindex.com). For ordinary people this is not all theory: the boats crossing the Mediterranean are full and they cross the sea in one direction only. My point is, they will be going the same way no matter what cloud communities are introduced, since the violence of global segregation that citizenship inflicts cannot be affected by the technology proclaiming an abstract 'global citizenship' to be a value and reaffirming it in the cloud.

Before discussing the potential benefits of a set of quasi-citizenships in the cloud it is crucial to be fully aware of the drastic differences between citizenships in 'real life' and fully internalise their ability to punish besides simply segregating at random. *Pace* Arendt's 'right to have tights' citizenship is a status associated with rights in a handful of countries only. In many others, it is a severe and undeserved liability and sometimes a mortal one. What blockchain offers to a Frenchmen will thus be

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[3]   Saada, E. (2012), Empire's Children: Race, Filiation, and Citizenship in the French Colonies. Chicago: Chicago University Press.

[4]   Shachar, A. (2009), *The Birthright Lottery: Citizenship and Global Inequality*. Harvard: Harvard University Press.

[5]   Milanovic, B. (2012), 'Global Income Inequality by the Numbers: In History and Now', *Policy Research Working Paper No. 6259*, The World Bank, available at http://documents.worldbank.org/curated/en/959251468176687085/Global-income-inequality-by-the-numbers-in-history-and-now-an-overview

radically different from what it offers to a Congolese (pick your Congo!). When refugees arrive in Europe or America, they often destroy, sometimes even eat, their passports. Have you tried to consider why? It is because many citizenships are so terribly poisonous and dangerous that you might be infinitely better off as a stateless person. This is because with a Central African Republic passport your child born in Brussels will be a Central African, not a Belgian, because you will need to wait for naturalisation longer and, ultimately, because CAR will have to accept you back once you are out of the Belgian asylum system. To be identifiable is always as bad a liability as the citizenship or the place of birth you will be identified with. It can ruin lives. This is where cloud communities come in as an impermissibly rosy dream. The proposal ignores the complexity of the world and fails to fully come to terms with its own dangers in the context of the current functions of citizenship behind the self-justificatory sacred façade put up uniquely for those who somehow happen to belong to the right country in order to let them sleep tight at night.

Citizenship's inescapable evil does not stem from the fact that it is a randomly assigned benefit, but from the reality that it is about branding as deficient those who are randomly proclaimed not to belong while treating such exclusion as self-explanatory and just. This justice is ethically void, however, as long as we believe that it is humanity that counts morally and that obliges us to respect others' desire to live a worthy life, as Joseph Carens has demonstrated.[6] Should this indeed be our starting point, any serious work to perfect the current citizenship paradigm – either on the ground or in the cloud – is nothing else but work that opposes ethical imperatives we all share. The untenability of citizenship's ethical narrative, no matter which way of telling it one chooses, is the elephant in the room, which ultimately explains the on-going demise of the citizenship of the 'good old times': a random supremacist status for armed white boys who belong and believe in the greatness of their land, whatever it might be, often at the expense of all their neighbours.

How do the cloud communities proposed by Orgad fit Joppke's story of the 'inevitable lightening of citizenship'?[7] In the former imperial centres such luxury as new online associations emerging through the individual sovereign governance of identity with the help of blockchain as Orgad describes it is only welcome – our world is open and ripe with opportunities – in the cloud and on the ground. About the rest of the world I am somewhat sceptical: as Robert Post has already suggested in his contribution, life in the place where you are is something that is of crucial importance, more than your cloud identity, whatever that would come to mean. And as Michael Blake points out, violence in the physical world is equally crucial. Work and education of your choosing, residence abroad, freedom of belief and expression, an ability to be with your loved ones, to go places – this is what a Saudi citizenship, now grotesquely granted to a robot, will no doubt deny you, especially if you are a woman. Using technology for escapism is something that falls far short, it seems to me, of its potential. A cloud community will not even save you from beheading in Saudi Arabia for confessing atheism online, for instance, or, if you happen to be a Chinese national, spending three years in jail for calling Mr Xi a 'steam bun' in a private chat conversation in your cloud.

Once escapism has been discarded, it becomes necessary to consider what cloud communities could be good for. And in doing so it is our imperative not to replicate the repugnant nature of citizenship as a justificatory label for random privilege and for explaining away global inequality. Here Estonia shows the way, as Poleshchuk has demonstrated.[8]

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[6] Carens, J. (2013), *The Ethics of Immigration*. Oxford: Oxford University Press.

[7] Joppke, C. (2010), *Citizenship and Immigration*. London: Polity.

[8] Poleshchuk, V. (2016). '"Making Estonia Bigger": What E-Residency in E-Estonia Can Do for You, What It Can Do for Estonia', *Investment Migration Working Papers*. Available at https://investmentmigration.org/download/making-estonia-bigger-e-residency-e-estonia-can-can-estonia/

It is not the cloud identity, – I am gay in the cloud since otherwise the government will kill me – it is the functional added value of the virtual statuses and 'residences' that should come to the fore. What I am saying is that clubs, no matter whether offline or in the cloud, have nothing to do with citizenships, since citizenships are involuntary and do not foster common interests or values. Consequently, calling any cloud identities 'citizenship' is a misconception. One needs to move on from citizenship when technology allows. What is possible today – and this is a great beginning Estonia started – is to use online residences as compensation mechanisms for the deficiencies of the statuses of citizenship, which the vast majority of the world's population got by birth. You are born in Afghanistan? Fine, with an Estonian residency online you can at least open a proper bank account and have access to basic state services – notaries, company registers etc. This is a primary use of new digital technologies.

A second purpose – and this one should be based on a broad agreement between states – is to use attested individual identities to judge people by those, rather than their passports. Crucially, these cannot go hand in hand. The core added value would be to replace one with the other. We are a long way from here and the connection between the cloud and 'real life' is crucial here, but what one can envisage is a world where babies in Afghanistan or Pakistan are born without at least some of the drastic harmful effects of the original sin of nationality and that peoples' worth at international borders is assessed via some factors other than the particular state that has been claiming the possession of them from birth. This should be the future of technological thinking to bring true liberation from the neo-feudal essence of a poisonous status, which is ethically vacuous, its political expediency notwithstanding. A technological revolution should not become a servant of the *status quo*, erecting yet higher walls between the haves and have-nots.

Cloud Communities and the Materiality of the Digital

Stefania Milan[*]

As a digital sociologist, I have always found 'classical' political scientists and lawyers a tad too reluctant to embrace the idea that digital technology *is* a game changer in so many respects. In the debate spurred by Liav Orgad's provocative thoughts on blockchain-enabled cloud communities, I am particularly fascinated by the tension between techno-utopianism on the one hand (above all, Orgad and Primavera De Filippi), and socio-legal realism on the other (e.g., Rainer Bauböck, Michael Blake, Lea Ypi, Jelena Dzankic, Dimitry Kochenov). I find myself somewhere in the middle. In what follows, I take a sociological perspective to explain why there is something profoundly interesting in the notion of cloud communities, why however little of it is really new, and why the obstacles ahead are bigger than we might like to think. The point of departure for my considerations is a number of experiences in the realm of transnational social movements and governance: what we can learn from existing experiments that might help us contextualize and rethink cloud communities?

Three problems with Orgad's argument

To start with, while I sympathise with Orgad's provocative claims, I cannot but notice that what he deems new in cloud communities – namely the global dimension of political membership and its networked nature – is indeed rather old. Since the 1990s, transnational social movements for global justice have offered non-territorial forms of political membership – not unlike those described as cloud communities. Similar to cloud communities, these movements were the manifestation of political communities based on consent, gathered around shared interests and only minimally rooted in physical territories corresponding to nation states.[1] In the fall of 2011 I observed with earnest interest the emergence of yet another global wave of contention: the so-called Occupy mobilisation. As a sociologist of the web, I set off in search for a good metaphor to capture the evolution of organised collective action in the age of social media, and the obvious candidate was… the cloud. In a series of articles[2] and book chapters,[3] I developed my theory of 'cloud protesting', intended to capture how the algorithmic environment of social media alters the dynamics of organized collective action. In light of my empirical work, I agree with Bauböck, who acknowledges that cloud communities might have something to do with the 'expansion of civil society, of international organizations, or of traditional territorial polities into cyberspace.' He also points out how, sadly, people can express their political views – and, I would add, engage in disruptive actions, as happens at some fringes of the movement for global justice – only because 'a secure territorial citizenship' protects their exercise of fundamental rights, such as freedom of expression and association. Hence the questions a sociologist might ask: do we really need the blockchain to enable the emergence of cloud communities? If, as I argue, the

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[*]   University of Amsterdam

[1]   Tarrow, S. (2005), *The New Transnational Activism*. New York: Cambridge University Press.

[2]   Milan, S. (2015), 'From social movements to cloud protesting: the evolution of collective identity', *Information, Communication & Society* 18 (8): 887-900; Milan, S. (2015), 'When algorithms shape collective action: Social media and the dynamics of cloud protesting', *Social Media + Society* 1 (2): 1-10.

[3]   Milan, S. (2015), 'Mobilizing in Times of Social Media. From a Politics of Identity to a Politics of Visibility', in L. Dencik & O. Leistert (eds.), *Critical Perspectives on Social Media and Protest: Between Control and Emancipation*, 53-71. New York: Rowman & Littlefield. Available at SSRN: https://ssrn.com/abstract=2880402; Milan, S. (2013), 'WikiLeaks, Anonymous, and the exercise of individuality: protesting in the cloud', in B. Brevini, A. Hintz & P. McCurdy (eds.), *Beyond WikiLeaks: Implications for the Future of Communications, Journalism and Society,* 191-208. London: Palgrave Macmillan.

existence of 'international legal personas' is not a pre-requisite for the establishment of cloud communities, what would the creation of 'international legal personas' add to the picture?[4]

Secondly, while I understand why a blockchain-enabled citizenship system would make life easier for the many who do not have access to a regular passport, I am wary of its 'institutionalisation', on account of the probable discrepancies between the ideas (and the mechanisms) associated with a Westphalian state and those of politically active activists and radical technologists alike. On the one hand, citizens interested in 'advanced' forms of political participation (e.g., governance and the making of law) might not necessarily be inclined to form a state-like entity. For example, many accounts of the so-called 'movement for global justice'[5] show how 'official' membership and affiliation is often not required, not expected and especially not considered desirable. Activism today is characterised by a dislike and distrust of the state, and a tendency to privilege flexible, multiple identities.[6] On the other hand, the 'radical technologists' behind the blockchain project are animated by values – an *imaginaire*[7] – deeply distinct from that of the state.[8] While the blockchain technology is enabled by a complex constellation of diverse actors, it is legitimate to ask whether it is possible to bend a technology built with an 'underlying philosophy of distributed consensus, open source, transparency and community' with the goal to 'be highly disruptive'[9] … to serve similar purposes as those of states?

Thirdly, Orgad's argument falls short of a clear description of what the 'cloud' stands for in his notion of cloud communities. When thinking about 'clouds', as a metaphor and a technical term, we cannot but think of cloud computing, a 'key force in the changing international political economy'[10] of our times, which entails a process of centralisation of software and hardware allowing users to reduce costs by sharing resources. The cloud metaphor, I argued elsewhere,[11] is an apt one as it exposes a fundamental ambivalence of contemporary processes of 'socio-legal decentralisation.' While claiming distance from the values and dynamics of the neoliberal state, a project of building blockchain-enabled communities still relies on commercially-owned infrastructure to function.

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[4] I am aware that there is a fundamental drawback in social movements when compared to cloud communities: unlike the latter, the former are not rights providers. However, these are the questions one could ask taking a sociological perspective.

[5] Della Porta, D. & S. Tarrow (eds.) (2005), *Transnational Protest and Global Activism*. Lanham, MD: Rowman & Littlefield; Juris, J. S. (2012), 'Reflections on #Occupy Everywhere: Social Media, Public Space, and Emerging Logics of Aggregation', *American Ethnologist* 39 (2): 259–279; McDonald, K. (2006), *Global Movements: Action and Culture*. Malden, MA and Oxford: Blackwell.

[6] Bennett, L. W. & A. Segerberg (2013), *The Logic of Connective Action Digital Media and the Personalization of Contentious Politics*. Cambridge, UK: Cambridge University Press; Milan, S. (2013), 'WikiLeaks, Anonymous, and the exercise of individuality: Protesting in the cloud', in B. Brevini, A. Hintz & P. McCurdy (eds.), *Beyond WikiLeaks: Implications for the Future of Communications, Journalism and Society*, 191–208. Basingstoke, UK: Palgrave Macmillan.

[7] Flichy, P. (2007), *The Internet imaginaire*. Cambridge, Mass.: MIT Press.

[8] Reijers, W. & M. Coeckelbergh (2018), 'The Blockchain as a Narrative Technology: Investigating the Social Ontology and Normative Configurations of Cryptocurrencies', *Philosophy & Technology* 31 (1): 103–130.

[9] Walport, M. (2015), *Distributed Ledger Technology: Beyond blockchain*. London: UK Government Office for Science. London: UK Government Office for Science, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf

[10] Mosco, V. (2014), *To the Cloud: Big Data in a Turbulent World*. New York: Paradigm Publishers, 1.

[11] Milan, S. (2015), 'When Algorithms Shape Collective Action: Social Media and the Dynamics of Cloud Protesting', *Social Media + Society* 1 (1): 1-10.

Precisely to reflect on this ambiguity, my most recent text on cloud protesting interrogates the materiality of the cloud[12]. We have long lived in the illusion that the internet was a space *free of geography*. Yet, as IR scholar Ron Deibert argued, 'physical geography is an essential component of cyberspace: *Where* technology is located is as important as *what* it is' (original italics).[13] The Snowden revelations, to name just one, have brought to the forefront the role of the national state in – openly or covertly – setting the rules of user interactions online. What's more, we no longer can blame the state alone, but the 'surveillant assemblage' of state *and* corporations.[14] To me, the big absent in this debate is the private sector and corporate capital. De Filippi briefly mentioned how the 'new communities of kinship' are anchored in 'a variety of online platforms'. However, what Orgav's and partially also Bauböck's contributions underscore is the extent to which intermediation by private actors stands in the way of creating a real alternative to the state – or at least the fulfilment of certain dreams of autonomy, best represented today by the fascination for blockchain technology. Bauböck rightly notes that 'state and corporations... will find ways to instrumentalise or hijack cloud communities for their own purposes.' But there is more to that: the infrastructure we use to enable our interpersonal exchanges and, why not, the blockchain, are *owned and controlled by private interests subjected to national laws*. They are not merely neutral pipes, as Dumbrava reminds us.

Self-governance in practice: A cautionary tale

To be sure, many experiments allow 'individuals the option to raise their voice … in territorial communities to which they do not physically belong,' as beautifully put by Francesca Strumia. Internet governance is a case in point. Since the early days of the internet, cyberlibertarian ideals, enshrined for instance in the 'Declaration of Independence of Cyberspace'[15] by late JP Barlow, have attributed little to no role to governments – both in deciding the rules for the 'new' space as well as the citizenship of its users (read: the right to participate in the space and in the decision-making about the rules governing it). In those early flamboyant narratives, cyberspace was to be a space where users – but really engineers above all – would translate into practice their wildest dreams in matter of self-governance, self-determination and, to some extent, fairness. While cyberlibertarian views have been appropriated by both conservative (anti-state) and progressive forces alike, some of their founding principles have spilled over to real governance mechanisms – above all the governance of standards and protocols by the Internet Engineering Task Force (IETF), and the management of the Domain Name System (DNS) by the Internet Corporation for Assigned Names and Numbers (ICANN).[16] Here I focus on the latter, where I have been active for about four years (2014-2017).

ICANN is organized in constituencies of stakeholders, including contracted parties (the 'middlemen', that is to say registries and registrars that on a regional base allocate and manage on behalf of ICANN the names and numbers, and whose relationship with ICANN is regulated by contract), non-contracted parties (corporations doing business on the DNS, e.g. content or infrastructure providers) and non-commercial internet users (read: us). ICANN's proceedings are fully

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[12] Stefania, M. (2018), 'The Materiality of Clouds. Beyond a Platform-Specific Critique of Contemporary Activism'. In M. Mortensen, C. Neumayer & T. Poell (eds.), *Social Media Materialities and Protest: Critical Reflections*. London: Routledge.

[13] Deibert, R (2015), 'The Geopolitics of Cyberspace After Snowden', *Current History* 114 (768): 9-15, at 10.

[14] Murakami Wood, D. (2013) 'What Is Global Surveillance?: Towards a Relational Political Economy of the Global Surveillant Assemblage', *Geoforum* 49: 317–326.

[15] Barlow, J. P. (1996), *Declaration of Independence of Cyberspace*. Available at http://homes.eff.org/~barlow/Declaration-Final.html

[16] The system of unique identifiers of the DNS comprises the so-called 'names' standing in for domain names (e.g., www.eui.eu), and 'numbers', or Internet Protocol (IP) addresses (e.g., the 'machine version' of the domain name that a router for example can understand). The DNS can be seen as a sort of 'phone book' of the internet.

recorded and accessible from its website (https://www.icann.org/); its public meetings, thrice a year and rotating around the globe, are open to everyone who wants to walk in. Governments are represented in a sort of United Nations-style entity called the Government Advisory Committee. While corporate interests are well-represented by an array of professional lobbyists, the Non-Commercial Stakeholder Group (NCSG), which stands in for civil society,[17] is a mix and match of advocates of various extraction, expertise and nationality: internet governance academics, nongovernmental organisations promoting freedom of expression, and independent individuals who take an interest in the functioning of the logical layer of the internet.

The 2016 transition of the stewardship over the DNS from the US Congress to the 'global multistakeholder community' has achieved a dream unique in its kind, straight out of the cyberlibertarian vision of the early days: the technical oversight of the internet[18] is in the hands of the people who make and use it, and the (advisory) role of the state is marginal. Accountability now rests solely within the community behind ICANN, which envisioned (and is still implementing) a complex system of checks and balances to allow the various stakeholder voices to be fairly represented. No other critical infrastructure is regulated by its own users. To build on Orgad's reasoning, the community around ICANN is a cloud community, which operates by voluntary association and consensus,[19] and is entitled to produce 'governance and the creation of law'.[20]

But the system is far from perfect. Let's look at how the so-called civil society is represented, focusing on one such entity, the NCSG. Firstly, given that everyone can participate, the variety of views represented is enormous, and often hinders the ability of the constituency to be effective in policy negotiations. Yet, the size of the group is relatively small: at the time of writing, the Non-Commercial User Constituency (the bigger one among the two that form the NCSG) comprises '538 members from 161 countries, including 118 noncommercial organizations and 420 individuals'[21], making it the largest constituency within ICANN: this is nothing when compared to the global internet population it serves, confirming, as Dzankic argues, that 'direct democracy is not necessarily conducive to broad participation in decision-making'. Secondly, ICANN policy-making is highly technical and specialised; the learning curve is dramatically steep. Thirdly, to be effective, the amount of time a civil society representative should spend on ICANN is largely incompatible with regular daily jobs; civil society cannot compete with corporate lobbyists. Fourthly, with ICANN meetings rotating across the globe, one needs to be on the road for at least a month per year, with considerable personal and financial costs.[22] In sum, while participation is in principle open to everyone, *informed*

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[17] Technically, of the DNS, which is only a portion of what we call 'the internet', although the most widely used one.

[18] Civil society representation in ICANN is more complex than what is described here. The NCSG is composed of two (litigious) constituencies, namely the Non-Commercial User Constituency (NCUC) and the Non-Profit Operational Concerns (NPOC). In addition, 'nonorganizedd' internet users can elect their representatives in the At-Large Advisory Committee (ALAC), organized on a regional basis. The NCSG, however, is the only one who directly contributes to policy-making.

[19] ICANN is both a nonprofit corporation registered under Californian law, and a community of volunteers who set the rules for the management of the logical layer of the internet by consensus. See also the ICANN Bylaws, available at https://www.icann.org/resources/pages/governance/bylaws-en (last updated in August 2017).

[20] This should at least in part address Post's doubts about the ability of a political community to govern those outside of its jurisdiction. One might argue that internet users are, perhaps unwillingly or simply unconsciously, within the 'jurisdiction' of ICANN. I do believe, however, that the case of ICANN is an interesting one for its being in between the two 'definitions' of political communities.

[21] 'Our membership', available at https://www.ncuc.org/about/membership/

[22] ICANN allocates consistent but not sufficient resources to support civil society participation in its policymaking. These include travel bursaries and accommodation costs and fellowship programs for induction of newcomers.

participation has much higher access barriers, which have to do with expertise, time, and financial resources.[23]

As a result, we observe a number of dangerous distortions of political representation. For example, when only the highly motivated participate, the views and 'imaginaries' represented are often at the opposite ends of the spectrum.[24] Only the most involved really partake in decision-making, in a mechanism which is well known in sociology: the 'tyranny of structurelessness',[25] which is typical of participatory, consensus-based organising. The extreme personalisation of politics that we observe within civil society at ICANN – a small group of long-term advocates with high personal stakes – yields also another similar mechanism, known as 'the tyranny of emotions',[26] by which the most invested, independently of the suitability of their curricula vitae, end up assuming informal leadership roles – and, as the case of ICANN shows, even in presence of formal and carefully weighted governance structures. Decision-making is thus based on a sort of 'microconsensus' within small decision-making cliques.[27] To make things worse, ICANN is increasingly making exceptions to its own, community-established rules, largely under the pressure of corporations as well as law enforcement: for example, the corporation has recently been accused of bypassing consensus policy-making through voluntary agreements ad private contracting.[28]

Why not (yet?): On new divides and bad players

In conclusion, while I value the possibilities the blockchain technology opens for experimentation as much as Primavera De Filippi, I do not believe it will really solve our problems in the short to middle-term. Rather, as it is always with technology because of its inherent political nature,[29] new conflicts will emerge – and they will concern both its technical features and its governance.

Earlier contributors to this debate have raised important concerns which are worth listening to. Besides Bauböck's concerns over the perils for democracy represented by a consensus-based, self-governed model, endorsed also by Blake, I want to echo Lea Ypi's reminder of the enormous potential *for exclusion* embedded in technologies, as digital skills (but also income) are not equally distributed across the globe. For the time being, a citizenship model based on blockchain technology would be for the elites only, and would contribute to create new divides and to amplify existing ones. The first fundamental step towards the cloud communities envisioned by Orgad would thus see the state stepping in (once again) and being in charge of creating appropriate data and algorithmic literacy programmes whose scope is out of reach for corporations and the organised civil society alike.

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[23] See for example: Milan, S. & A. Hintz (2013), 'Networked Collective Action and the Institutionalized Policy Debate: Bringing Cyberactivism to the Policy Arena?', *Internet & Policy* 5 (1): 7–26.

[24] Milan, S. (2014), 'The Fair of Competing Narratives: Civil Society(ies) after NETmundial', *IPO Blog*, 10 September. Available at http://globalnetpolicy.org/the-fair-of-competing-narratives-civil-societyies-after-netmundial/

[25] Freeman, J. (1972), *The Tyranny of Structurelessness*. Available at http://www.jofreeman.com/joreen/ tyranny.htm

[26] Polletta, F. (2002), Freedom Is an Endless Meeting: Democracy in American Social Movements. Chicago: University of Chicago Press.

[27] Although a quantitative analysis of the stickiness of participation in relation to discursive change reveals a more nuanced picture (see, for example: Milan, S. & N. ten Oever (2017), 'Coding and encoding rights in internet infrastructure', *Internet Policy Review* 6 (1): 1-17). See: Gastil, J. (1993), *Democracy in Small Groups. Participation, Decision Making & Communication*. Philadelphia, PA and Gabriola Island, BC: New Society Publishers.

[28] 'ICANN Drifting Toward Online Content Regulation, Says Law Professor', *Circle ID*, 28 February 2017, available at http://www.circleid.com/posts/20170228_icann_drifting_toward_online_content_regulation_says_law_professor/

[29] Bijker, W. E., T. P. Hughes & T. Pinch (eds.) (2012), The Social Construction of Technological Systems. New Direction in the Sociology and History of Technology. Cambridge, MA and London, England: MIT Press.

There is more to that, however. The costs to our already fragile ecosystem of the blockchain technology are on the rise along with its popularity. These infrastructures are energy-intensive: talking about the cryptocurrency Bitcoin, tech magazine Motherboard estimated that each transaction consumes 215 Kilowatt-hour of electricity – the equivalent of the weekly consumption of an American household.[30] A world built on blockchain would have a vast environmental footprint.[31] Once again, the state might play a role in imposing adequate regulation mindful of the environmental costs of such programs.

But I do not intend to glorify the role of the state. On the contrary, I believe we should also watch out for any attempts by the state to curb innovation. The relatively brief history of digital technology, and even more that of the internet, is awash with examples of late but extremely damaging state interventions. As soon as a given technology performs roles or produces information that are of interest to the state (e.g., interpersonal communications), the state wants to jump in, and often does so in pretty clumsy ways. The recent surveillance scandals have abundantly shown how state powers firmly inhabit the internet[32] – and, as the Cambridge Analytica case[33] reminds us, so do corporate interests. Moreover, the two are, more often than not, dangerously aligned.

I do not intend, with my cautionary tales, to hinder any imaginative effort to explore the possibilities offered by blockchain to rethink how we understand and practice citizenship today. The case of Estonia shows that different models based on alternative infrastructure are possible, at least on the small scale and in presence of a committed state. As scholars we ought to explore those possibilities. Much work is needed, however, before we can proclaim the blockchain revolution.

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[30] 'One Bitcoin Transaction Now Uses as Much Energy as Your House in a Week', *Motherboard*, 1 November 2017, available at https://motherboard.vice.com/en_us/article/ywbbpm/bitcoin-mining-electricity-consumption-ethereum-energy-climate-change

[31] Also see: Mosco, V. (2014), *To the Cloud: Big Data in a Turbulent World*. New York: Paradigm Publishers.

[32] Deibert, R. J. (2009), 'The geopolitics of internet control: censorship, sovereignty, and cyberspace', in A. Chadwick & P. N. Howard (eds.), *The Routledge Handbook of Internet Politics*, 323–336. London: Routledge; Deibert, R. J., J. G. Palfrey, R., Rohozinski & J. Zittrain (eds.) (2010), *Access Controlled: The Shaping of Power, Rights, and Rule in Cyberspace*. Cambridge, MA: MIT Press; Lyon, D. (2015), *Surveillance After Snowden*. Cambridge and Malden, MA: Polity Press.

[33] 'Cambridge Analytica case highlights Facebook's data riches', *Financial Times*, 19 March 2018, available at https://www.ft.com/content/c1f326a4-2b24-11e8-9b4b-bc4b9f08f381

Cloud Agoras: When Blockchain Technology Meets Arendt's Virtual Public Spaces

Dora Kostakopoulou[*]

While developments in information technology have always sparked lively debates about democratic participation and citizenship, the advent of blockchain technology promises to change the concept and nature of participatory citizenship by providing an inclusive, secure and transparent mechanism of data sharing among an unlimited number of members. Liav Orgad has written a powerful contribution about the promise of blockchain technology. I fully share his thoughts and his optimism. Blockchain participants are able to interact, share information, collaborate and have access to an incredible amount of information organised in blocks without the intervention of a centralised authority and without any reliance on a centralised platform. More importantly, everyone's copy of the distributed database will be kept updated and will be immutable; information can be added by any member of the global network, but cannot be deleted. Blockchain is thus a platform for worldwide information sharing, interaction and collaboration. As such, it has the potential to enhance political participation, trigger civic mobilisation and to provide the substratum for public action on a global scale.

Such a bottom up, participatory and size-neutral (the network could consist of billions of people) digital network does not merely offer a glimpse of what might be possible in terms of global citizenship but, as Liav Orgad has explained, casts doubts on any arguments about the impossibility of global citizenship. This is because blockchain simply removes three of the main obstacles for its realisation; namely, the impermeability of state borders, the size of the demos, and certain costs associated with political participation. Participants just need to have internet access in order to join a network comprising millions of citizens from diverse regions and remote locations of the globe who could be mobilised in influencing public policies and taking part in public actions.

In what follows, I will thus sidestep questions about the feasibility of global citizenship in order to examine how the new technological revolution will lead to innovations in political life and will create Hannah Arendt's public spaces of 'virtual' citizenship. By so doing, I take it for granted that blockchain is a 'game-changer' and that it *could* have significant transformative effects on societies, politics and citizenship. I use the verb 'could' because I do not wish to embrace determinism or to imply the existence of a causal relation between technology and political processes. Blockchain has the potential to transform the way we think about public spaces, citizenship and political participation, but this potential can only be realised if technology is put to uses which can enhance democratic political processes.

My critics might object here that we do not need technological advancements in order to procure new conceptions of public space. Analyses informed by the thinking of philosophers, such as Henri Lefebvre, and geographers, such as Doreen Massey and Edward Soja, have highlighted that spaces are not given but are constructed in different ways by politics and discursive practices. Readers might recall Peter Maier's anthology on the changing boundaries of the political in the late 1980s.[1] In it, Maier mapped the blurring of the distinction between the state and civil society, while a few years later, Gilles Deleuze commented on the shifting of borders and the proliferation of political spaces within contemporary societies of control.[2]

While all this is true, blockchain promises to realise those ideas in unprecedented ways. It also holds the promise of generating huge publics beyond (and across) geographical borders and

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[1]   Maier, C. C. (ed.) (1987), *The Changing Boundaries of the Political.* Cambridge: Cambridge University Press.

[2]   Deleuze, G. (1992), 'Postscript on the Societies of Control', MIT Press October 59: 3-7. Available at http://www.jstor.org/stable/778828.

territorially defined communities and thus of opening up new citizenship spaces. Rainer Bauöock and Peter Spiro have noted this in their contributions. Citizenship relies on the existence of public spaces of communication, of exchange of ideas, arguments and contested viewpoints and of joint decision-making. For a significant period of time, the agoras of the direct democratic experimentation in ancient Athens became remnants of a distant past that had no chance to be replicated in the present and future. Now, virtual agoras 'containing' millions of active and activist individuals can be built onto blockchain.[3] The mythical space of a distant past becomes connected with, and re-enacted within, the contemporary world of an embodied digital network that makes citizenship a network good.[4]

This is essentially the realisation of Hannah Arendt's conception of 'virtual' public spaces. Virtual 'agoras' built on blockchain will become shared common worlds of continuous flows of speech and action, that is, spaces where people would recognise one another as equals or at least equally entitled to express their views, to 'deal only with one's peers' and to decide on common actions at national, international and global levels.[5] As Arendt had eloquently noted, the (public) space of speech and action 'can find its proper location almost any time and anywhere'.[6] By transcending topological as well as institutional accounts of the 'public space', blockchain technology not only lends credence to Arendt's conception of public space, but it also promises to open up decentralised public spaces in which all participants can be contributors, deciders and holders of institutional memories. The participants' geographical location does not matter. In an unprecedented border-transcending move, new spaces of citizenship appear 'almost any time and anywhere' as Arendt had argued. What ties all the blockchain participants together in the virtual public space of citizenship is simply their ongoing concern and active engagement.[7] These are, in reality, the characteristics that sustain all communities, be they virtual or not: members are visibly concerned about the common state of affairs and want their claims, needs, and aspirations to be heard.

This development can bring about a complete reconceptualisation of the nature of international society; non-statist ways of defining it will gain prominence. Hedley Bull's envisaged transformation of international society from a society of states to a society of peoples will be progressively realised.[8] Cloud agoras will also prompt a rethinking of communitarian ways of defining communities and international society which see society and culture as interlocked. This is because they do not rely on some form of cultural homogeneity or conformity to a majority's ideas and narratives; the rely, instead, on the coming together of strangers[9] in order to share their concerns and information, express their interests, make demands on the political system and to articulate proposals for common action. All this is bound to give rise to interesting questions about ways of constructing political order and legitimacy in international relations and politics.

While cloud agoras have the potential of dislocating citizenship from its statist reference point and stimulating citizen involvement by delivering the affirmative requirements for an active citizenry, namely, information sharing, the exchange of ideas and preferences, capability for action and the means of exerting influence and pressure, they will not be able to resolve the 'problem of equality of voice'. Claude Lefort, Nancy Fraser, Jürgen Habermas and others have commented on the inequalities

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[3]   Isin, E. & M. Saward (2013), *Enacting European Citizenship*. Cambridge: Cambridge University Press.

[4]   Kostakopoulou, D. (2008), *The Future Governance of Citizenship*. Cambridge: Cambridge University Press, 107-110.

[5]   Arendt, H. (1958), *The Human Condition*. Chicago: Chicago University Press.

[6]   Above n. 5, at 198.

[7]   Kostakopoulou, D. (1996), 'Towards a Theory of Constructive Citizenship in Europe', *Journal of Political Philosophy* 4 (4): 337-358.

[8]   Bull, H. (1977), *The Anarchical Society*. London: Macmillan.

[9]   Young, I. M. (1986), 'The Ideal of Community and the Politics of Difference', *Social Theory and Practice* 12 (1): 1-26, at 21-23.

that persist in democratic public spheres. Some voices will be louder and more influential than others and women will always struggle to find time to engage even virtually. Socio-economic disparities measured in terms of education, income and occupation will also allow certain participants to easily convert their possessed resources into political involvement. The cognitive and linguistic skills for political articulations and activity are not uniformly distributed. Nor do they exist independently of individuals' socio-economic setting and geographical location across the globe. Peter Spiro, Lea Yip and Stefania Milan correctly highlight this problem. Cloud agoras therefore will not be able to transcend the difficulties of ensuring full inclusion in the open public grid. They will certainly be more inclusionary that the existing publics, but they will still represent a stratified model of political community or public space(s). They will also have their own 'spinners', exploiters and manipulators of public opinion. I recall Jean Mansbridge's observations about the dark world of domination and manufactured invisibility of actors underpinning deliberative democracy.[10]

Although it is true that participatory parity cannot be easily achieved even in cloud agoras, it is equally true that the common world of citizenship beyond borders, states and nations could be more activist. And this is good news for democracy in general. It would be relatively easy for millions of blockchain members to mobilise on specific issues and to demand change in law and policy regionally, nationally and globally. It would also be more difficult for decision-making elites to ignore the voices of so many people and to pretend that they do not count or that their claims do not matter. Civic awakenings and political mobilisations in cloud agoras are also likely to exert influence on other public spaces that are more conventional and delineated across national and statist lines. For the boundaries of public spaces, virtual and non-virtual ones, will always be porous and issues will leak from one domain to another. The dawn of global citizenship will thus be a combination of the activation of an international or global society and of a more activist citizenship. Virtual global citizenship promises to be more virtual, in the republican sense; citizens will continually question aspects of public life, make public disclosures of wrongdoing, take an active part in public affairs and engage in regular, assertive action.

That this is good news for citizenship, democracy and politics in general cannot be denied. The virtual public space of blockchain communities will make citizens think, engage and act more virtually. In other words, the virtual reality of clould agoras will have an impact on institutions and the participants themselves; it will yield pressures for more open, transparent and accountable institutions and will result in more virtuous, that is, actively engaged, citizens. Whether cloud agoras will prove to be decisive public spaces and strong promoters of democratic processes that make wealth, power and privilege accountable or merely subaltern counter publics will depend on the intentions and actions of their participants. In other words, the answer to the question whether the virtual public space of global citizenship will have a decisive influence on global, regional and national public policy-making is not theoretical or scholarly; it will be a contextual one.

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[10] Mansbridge, J. (1995), 'Does Participation Make Better Citizens?', *The Good Society* 5 (2): 1-7.

Global Cryptodemocracy Is Possible and Desirable

Ehud Shapiro[*]

The fascinating discussion kicked-off by Liav Orgad addresses the interplay between the clouds and earth: How do cloud citizens and cloud communities relate to their earthly counterparts?

Arguments by Orgad, Primavera De Filippi, Francesca Strumia, Peter Spiro and Dora Kostakopoulou espouse the potential benefits of global citizenship, ordained by the clouds, and cloud communities that such global citizens can form, inhabit and govern. Counterarguments by Rainer Bauböck, Robert Post, Michael Blake, Costica Dumbrava, Yussef Al Tamimi, Jelena Dzankic, Lea Ypi and Dimitry Kochenov suggest that what happens in the cloud stays in the cloud, and may not be helpful or relevant to, or at least cannot substitute for, earthly dominions, due to fundamental differences between the two. I will try to counter these counterarguments.

A key introductory point made by Bauböckk is that Orgad 'must have some form of global federal democracy in mind', yet that 'his main vision is, however, the emergence of alternative forms of political community at the sub-global level'. It is this main vision of Orgad that much of the weighty and thoughtful criticism is directed at.

To address it, I recall a strategy from mathematics: When faced with a difficult problem, namely a difficult theorem to prove, turn it into an even bigger problem: Define a more general and broader theorem, prove it, and then the original theorem easily follows as a corollary. This seemingly-paradoxical strategy works sometimes since a higher vantage point may offer a clearer view of the crux of the matter. I try to apply this strategy here: I will not address criticisms directed at sub-global political cloud communities directly. Instead, I will paint a vision of a global democracy, enabled by the internet and the emerging technologies of blockchain and cryptocurrencies, explain how subsidiary communities based on shared territory or common interests, as envisioned by Orgad, can emerge and operate within it, and respond to criticism from this broader and more encompassing perspective.

From the outset, key criticisms that apply to subsidiary cloud communities do not apply to a global democracy, whether on or off the cloud (we note in parenthesis the respective critics): It has a clear territory (Bauböck, Post, Blake, Al Tamimi) – Planet Earth; it has diverse membership (Bauböck, Blake) – humanity at large; membership is involuntary (Bauböck, Post, Al Tamimi, Ypi) and by decree – just as earthly states conscript citizens by decree; it has room for political communities 'that differ profoundly in their interests, identities and ideas about the common good' (Bauböck, Al Tamimi); and, due to all the above, it is clearly political (Bauböck, Post, Blake, Al Tamimi). Key remaining criticisms not answered by generalising the vision to incorporate all of humanity are those related to the use of coercion in community governance (Bauböck, Post, Blake, Dumbrava, Al Tamimi), lack of inclusivity (Ypi and Kochenov), and the risks of new technology (Dumbrava), which I will answer now in turn.

For our envisioned global democracy to be worthy of its name, it must uphold democratic values[1], including *sovereignty*, *equality*, *freedom of assembly*, *the subsidiarity principle*, *transparency*, and the conservation of the natural and imprescriptible human rights: *liberty, property, safety and resistance against oppression*.[2]

A fundamental advantage of blockchain technology is that it is the only technology to date that can uphold *sovereignty*: The multitudes participating in the operation of the blockchain are its sovereign;

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no member, third party or outside entity has omnipotent 'super user' or 'administrator' capabilities over the system, and no-one can pull the plug on it: it will survive as long as there are interconnected participants who are able and willing to continue its operation.[3] Hence, the answer to Stefania Milan's question, 'do we really need the blockchain to enable the emergence of cloud communities?', is: Yes, if we want cloud communities to be sovereign and not subservient.

The situation is not as rosy with *equality*. Governance trepidations of the 'cloud communities' of the leading cryptocurrencies, Bitcoin and Ethereum, which consist of their developers, miners and owners, resulted in community breakups termed 'hard forks'. Hence, second- and third-generation cryptocurrencies attempt to address their self-governance from first principles.[4] However, they offer only plutocratic solutions,[5] espousing 'one coin – one vote' instead of the 'one person – one vote' principle necessary for *equality*. It may be ironic, given the thrust of our discussion, that the only approach available today to realize equality on the blockchain is to piggyback on identities issued by earthly governments. Besides defeating the purpose of freeing cloud communities from the grasp of their earthly counterparts, this approach cannot mix and match governments or identity-granting authorities, lest people with multiple government-issued identities have multiple votes in the cloud; and it excludes people, such as refugees, who may be hard pressed to present a government-issued identity.

Realising truthful, unique and persistent global digital identities for all, a precondition for making an egalitarian blockchain, is a major open challenge.[6] But, for the sake of the vision we wish to paint, please suspend disbelief and assume that: (i) a worthy method for granting global digital identities to all has been devised, allowing any individual to claim a global identity (which functions as the 'attested individual identities' Kochenov aspires for); call the rightful owners of such global identities *global citizens*; (ii) unhindered internet access has been globally recognised as a basic civil right and is provided, directly or via a proxy, to any individual wishing to become a global citizen. While disbelief regarding the first assumption could be discharged in a decade, the second one will take longer. However, stating the goal of universal access as a basic civil right, taking concrete steps to implement it effectively, and making interim amends to compensate for its temporary lack, are all essential for our vision to be legitimate (and to address the justified criticisms of exclusion by Ypi and Kochenov). With this in mind, let us explore the vision of bringing about a global democracy of global citizens.

As much as disbelief is suspended, a method for granting global digital identities will never be perfect. Hence, the global democracy will have to grapple with fraud (fake, duplicate and stolen identities, Sybil attacks), extortion (the \$5 wrench attack) and negligence (lost/forgotten password). Resolving such matters with due process would require a court. Such a court would need to rule according to a constitution. And the operation of the court (populated most likely by a combination of people and machines) will have to be financed. So we have hardly left the doorstep in our journey towards a global cloud democracy, and already discovered that in order to realise *equality* we need a global court, a global constitution, and a global currency.

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[3] I acknowledge Milan's point that such interconnectedness (but not the computers being connected!) would most-probably be commercially-owned, and that it is essential that such interconnectedness be neutral and unhindered, even if owned and controlled by private or government interests. Given that, global citizens can be the true sovereign of the global democratic blockchain outlined below.

[4] Bitshares (2018), *Technology*. Available at https://bitshares.org/technology/; Tezos (2018), *Governance*. Available at https://www.tezos.com/governance

[5] Buterin, V. (2018), 'Governance, Part 2: Plutocracy Is Still Bad', *Vitalik Buterin's Website*, 28 March, available at https://vitalik.ca/general/2018/03/28/plutocracy.html

[6] Disclosure: My team at Weizmann aims to address this global challenge. Note that it will not be solved just by achieving broader coverage of local government-issued IDs ('Identification for Development', available at http://www.worldbank.org/en/programs/id4d).

That the global democracy needs a currency immediately suggests a cryptocurrency. But, how can we entrust the future of humanity to the hands of an environmentally-harmful[7], plutocratic regime? The answer is of fundamental importance: Current cryptocurrencies were architected on the premise that participants are anonymous and trustless, and resorted to the deliberately wasteful (Milan) proof-of-work protocol to cope with trustlessness. If indeed we have a mechanism for granting truthful and unique global digital identities that is reasonably resilient to attacks (e.g. at most one third of the global identities are compromised at any time)[8] then the global democracy can deploy an egalitarian and planet-friendly cryptocurrency with a democratic governance regime; let's call such a cryptocurrency a *democratic cryptocurrency*.

Let's take stock: We have a democratic cryptocurrency governed by sovereign global citizens that are subject to a global court that rules according to a global constitution and is financed by the democratic cryptocurrency. This may sound a bit circular, but that's exactly how earthly states finance their operation. For example, the democratic cryptoeconomy can be fuelled by a universal basic income to all global citizens.[9] Income, wealth and transactions could be taxed, progressively if the global democracy decides so. Tax revenues would be disbursed to finance the operation of the global democracy, in particular the court and the underlying computational infrastructure ('mining'), as well as other purposes, according to a democratically-formed budget.[10] To prevent speculative manipulation of the exchange rate of the democratic cryptocurrency, a global central bank may be established, with authority to purchase and sell foreign (crypto)currency to hinder such manipulations; the bank can similarly set an interest rate. The constitution will have to be updated as the global democracy develops, and subsidiary legislation will have to be adopted. So, in just a few short paragraphs we have come to realise that the global citizens of a global cloud democracy that has its own cryptocurrency and cryptoeconomy will have to recreate almost all the functions of earthly states; let's call this resulting specific vision a *global cryptodemocracy*, to distinguish it from the more general and abstract idea of a global democracy. If successful, it would show that a technology built with an 'underlying philosophy of distributed consensus, open source, transparency and community' can be both 'highly disruptive' *and* 'serve similar purposes as those of states' (Milan); and it could achieve that without a reliance on the private sector and corporate capital that would necessitate paying undue attention to their interests and lobbying (Milan).

Additional key criticisms concern the ability of our global cryptodemocracy to protect human rights (Bauböck, Blake, Kochenov), collect taxes (Bauböck, Post) and in general enforce the rule of the law, given that physical coercion is possible on earth but not in the clouds (Bauböck, Post, Blake, Dumbrava, Al Tamimi). To redress crimes against global identities, we propose that global identities be realised as programmable software agents, aka 'smart contracts', programmed to obey certified court orders. Thus, coercion is achieved through design and programmability, without violence: If the court determines a global identity to be fake, then it can directly order it to terminate; if determined to be a duplicate, then it can be ordered to merge into another identity, and if stolen then to change its owner. Regarding Milan's observation that 'activism today is characterised by […] a tendency to privilege flexible, multiple identities', we cannot hold the stick at both ends: aspire for egalitarian rule

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[7] Present-day cryptocurrencies are unsustainable, even environmentally-harmful, since the proof-of-work protocols that underlie, for example, Bitcoin and Ethereum are unfathomably energy-wasteful on purpose: The ongoing operation of Bitcoin alone consumes as of today more energy than does the entire state of Israel, with its more than 8 million inhabitants (Bitcoin Energy Consumption Index, available at https://digiconomist.net/bitcoin-energy-consumption)

[8] Algorand (2018), *Algorand Website.* https://www.algorand.com/

[9] Flynn, J. (2018), 'The Cryptoeconomics of Funding a Universal Basic Income', *Technophile Musings*, 21 March, available at https://jamespflynn.com/2018/03/21/the-cryptoeconomics-of-funding-a-universal-basic-income/

[10] Shapiro, E. & N. Talmon (2017), 'A Condorcet-Consistent Democratic Budgeting Algorithm', *Computer Science and Game Theory*, available at https://arxiv.org/abs/1709.05839

of law in a global democracy, and undermine it with flexible (and hence unaccountable) and multiple (and hence unfairly privileged) identities.

We propose to integrate the global citizen's global identity with her democratic cryptocurrency wallet into one entity, termed *global persona*. A global persona is the global citizen's proxy in the cloud: it is entrusted with the global citizen's identity information and crypto-assets, and it performs financial transactions and civic duties in the global cryptodemocracy on behalf of the global citizen it represents. Being unique and persistent makes a global persona accountable for the global citizen it represents. Hence, in addition to the court orders described above, a court may also issue fines against a global persona, payable immediately from her wallet, or deducted from her future (universal basic) income. As the global persona is programmed to obey court orders, no force is needed to collect such fines either. Income, wealth and transaction taxes can be similarly collected without the use of force, by programming global personas to obey the (democratically instituted) tax rules that are in effect. Of course, the court must be open to appeals on any decision and transaction.

A key remaining criticism relates to relying on and overseeing the technologies that will underlie our envisioned global cryptodemocracy (Post, Dumbrava). The criticism is valid, but is mostly equally valid of any technology on which humanity depends today, and there are many. Perhaps one key technological vulnerability is related to the democratic process itself, ensuring that elections and more generally voting on the blockchain at least stand up to earthly standards.[11] Regarding overseeing blockchain technology, blockchain governance is indeed an issue of active research and experimentation, with the recognition that a change of underlying technology of a blockchain is as akin to, and as grave as, a change of constitution in a democracy. The global cryptodemocracy would employ the constitutional approach to its core technology, allowing constitutional change by its sovereign global citizens via a democratic process. Such a process must dampen the immediacy of internet communication, lest mob dynamics may rule, by employing hysteresis measures such as special majority requirements.[12] Recovery mechanisms would also be established, and invoked, by democratic decision.

Let us now consider Orgad's vision of multiple cloud communities with a shared concern or ascriptive, thematic or geographic memberships 'whose aim is political decision-making and in which individuals take part in a process of governance and the creation of law.'

First, we note that all these communities can be subsidiary communities of the global cryptodemocracy, potentially with multiple levels of hierarchy (e.g. subsidiary animal rights or Bahá'í communities, with their own subsidiary communities based on country of residence); that the ability to form them is a manifestation of *freedom of assembly* in the clouds; and that allowing them to conduct their affairs without outside intervention is in line with the *subsidiarity principle*.

Second, such communities, within the context of a functioning global cryptodemocracy, may have at least one clear political goal: To draft and promote, within the parent global cryptodemocracy, policy and legislation that pertain to the rights and goals of their (possibly minority) community members. Recall the second article of the 1789 Declaration of the Rights of Man and Citizen: 'The goal of any political association is the conservation of the natural and imprescriptible rights of man. These rights are *liberty, property, safety and resistance against oppression*'. To uphold these, the conduct of all subsidiary cloud communities must be *transparent* in order to ensure that no subsidiary community aims to harm the liberty, property or safety of other communities or global citizens.

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[11] European External Action Service (2018), *Compendium of International Standards for Elections*. Available at https://eeas.europa.eu/sites/eeas/files/compendium-en-n-pdf.pdf

[12] Shapiro, E. (2018), 'Foundations of e-Democracy', *Computers and Society*. Available at https://arxiv.org/abs/1710.02873

Third, within these rich and multi-faceted cloud communities, a virtual punishment with a global scope against one's global persona, e.g. temporary suspension or even just a public reprimand, applied to all subsidiary cloud communities, would be severe indeed. Hence, the higher the value of the subsidiary cloud communities to peoples' lives, the mightier the coercive power of the global cryptodemocracy.

While we have implicitly assumed an egalitarian, democratic decision-making process at the core of global cryptodemocracy and in its subsidiary communities that will choose to adopt it, we have not specified this process. Such a mechanism faces many challenges, including 'tyranny of structurelessness', 'tyranny of emotions', decision-making by 'microconsensus' within small cliques (Milan) and many others. The question of how to best reach a democratic decision has been investigated sporadically for centuries (e.g. by Llull, Condorcet, Borda), and intensively for the last 70 years within Social Choice theory. Much theory was developed, much confusion was sowed, and confidence in democracy has eroded, mainly due to Arrow's impossibility theorem and its follow-on work. I will just hint that adding a taste for reality to social choice theory can undo much of this damage and restore trust in democratic decision making, on and off the cloud.[13]

I have aimed to show that a vision of a global cryptodemocracy, with a rich set of subsidiary cloud communities, is realisable and have tried to address many of the criticisms raised in this debate. But, even if a global cryptodemocracy is realisable, and successfully addresses criticism, is it desirable? My personal answer is positive for two reasons: First, I believe that, since the days of Kant and even before,[14] the proponents of a world government own the moral high ground, and the weakness of their position was practical: Until now, for a world government to materialise, local governments have to volunteer to cease some of their power; and giving up of power is not known to happen voluntarily. Fortunately, earthly democracies are sufficiently free so that the formation of a global cryptodemocracy does not require their consent. True, dictatorial regimes may prevent their citizens from participating, but this would, eventually, be at their own peril, as the interests of their people will not be represented as well. And true, the full power of a global cryptodemocracy will not be realised until proponents of global democracy become majorities in the majority of their respective earthly states. Yet, embryonic as it may be, the global cryptodemocracy vision presented here may very well be the only concrete proposal towards the ultimate realisation of a global democratic government based on currently available technologies.

And this relates to my second reason. I believe that for representative democracies to rebounce from their worldwide decline, they should undergo a major revision and adopt the practices of one of the oldest and most successful democracies in the world, namely the Swiss federal direct democracy. Given that those in power never give it up voluntarily, and that direct democracy disempowers representatives, such a major shift cannot happen without a major outside force in its favor. And new technology can offer such a force. In particular, political e-parties, formed as subsidiary cloud communities of the global cryptodemocracy, sharing the same technology and networking to share winning practices and methods, may be able to win earthly elections and change earthly democracies for the better. This in turn may result in such earthly democracies officially supporting[15] the global

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[13] Shapiro, E. & N. Talmon (2018), 'Incorporating Reality into Social Choice', *Computers and Society*, available at https://arxiv.org/abs/1710.10117

[14] Global Challenges Foundation (2018), *Global governance models in history*. Stockholm: Global Challenges Foundation, available at https://api.globalchallenges.org/static/files/GG%20models%20in%20history%20EN.pdf

[15] For example, a state may create government-attested global personas for all its citizens, place them in the escrow of the state notary, and assign them to citizens upon their presentation of a government-issued ID. This would immediately turn all state citizens into global citizens. A state citizen who already owns a global persona will have to merge it with the received government-attested global persona, lest she would be guilty of owning duplicate global personas.

cryptodemocracy in its rise into a *bona fide* egalitarian democratic world government of all global citizens.

The Future of Citizenship: Global and Digital
A Rejoinder

Liav Orgad[*1]

This has been an insightful discussion that touches upon some of the most fundamental concepts in political theory – communities, states, citizenship, and sovereignty. New technologies challenge the meaning and essence of these terms and blur the lines between physical and digital, local and global. The nature of the transformation is still a puzzle, but sooner rather than later the 'Fourth Industrial Revolution' will reach the institution of citizenship. The possible effects are promising but, as this GLOBALCIT debate shows, scary too.

My celebration of the potential of blockchain technologies to advance the idea of global citizenship lost in the GLOBALCIT digital agora, at least if we count 'votes.' There are four firm supporters (Primavera De Filippi, Francesca Strumia, Dora Kostakopoulou, Ehud Shapiro), five strong objectors (Robert Post, Michael Blake, Peter Spiro, Lea Ypi, Dimitry Kochenov), and five people who are somewhere in between, acknowledging the potential yet expressing concerns (Rainer Bauböck, Costica Dumbrava, Yussef Al Tamimi, Jelena Dzankic, Stefania Milan). The objections are wide – theoretical and practical, empirical and normative, methodological and conceptual. The idea of blockchain-based global citizenship, which can lead to the development of cloud communities that seek to take part in international decision making, is seen as 'techno-utopianism' (Milan), 'escapism' (Kochenov), and 'exclusion[ary]' (Ypi), a risk to 'territorial democracy' (Bauböck) that may bring a 'world without law' (Post) and 'legitimate coercion' that is so essential for the protection of human rights (Blake).

My kick-off had several premises. When discussing the need for an international legal persona for all human beings, I indicated three fundamental problems: human rights concerns (1.1 billion people do not have an official identification), lack of self-governance (individuals have no direct voice in international law-making), and unequal representation (the principle of 'one-state, one-vote' leads to disparities in individual voting power). I identified three developments – the rise of global interconnectedness, identity, and responsibility – that, taken together, can end up with the creation of an international legal persona and digital identity (as a form of 'global citizenship'), thereby mitigating some of these problems. I also indicated one possible outcome of global citizenship – the emergence of (top-down and bottom-up) decentralised 'cloud communities' in which global citizens, sharing a common bond, can be politically organised and collaborate with the purpose of influencing international decision making and, eventually, becoming part of it. The authors in this debate have not addressed the premises, yet challenged my observations (e.g., global interconnectedness) and my conclusion – the potential of global digital citizenship to do more good than harm. I cannot do justice to all the subtle replies, so let me first express my gratefulness to the participants – this has been enriching experience, although it has not changed my optimistic view – and briefly address below some issues that I see as central.

Cloud computing

A large percentage of humanity is already engaged with some forms of cloud computing on a daily basis. Whenever you use Google Drive, Apple iCloud, and Dropbox, you spend time 'in the cloud.' Whenever you use audio and video streaming, online storage, and mobile services, you are 'in the cloud.' Government services, research data, medical records, and consumer services are available 'in

the cloud.' Social networks too are 'in the cloud.' I have never physically met most of the authors who contributed to this debate, but I meet them on a daily basis on Facebook. The reason why we call these digital structures 'cloud' is not due to the lack of territory – the hardware is located somewhere – but because territory is largely *irrelevant* for the user and the service.

Cloud computing does not create, in and of itself, a 'community' (Post, Spiro), let alone a political community (Blake). Facebook is a social network, not a political community. It is commercial and dictatorial – members have no common bond and cannot create law or engage in governance – and it does not guarantee a truthful unique identity. Yet, in recent years there have been attempts to create cloud-based 'communities' by using blockchain and other technologies. This started as private initiatives, such as Bitnation, but spread into government initiatives, as illustrated by Estonia's e-residency. True, e-Estonia is far from creating a 'community'; Estonia's e-residents do not interact with one another or cooperate for political purposes. They are a group of clients more than a sovereign. It is also true that the notion of DBVNs (Decentralized Borderless Voluntary Nations), where anyone can build a 'community' in a Pangea jurisdiction – an IKEA-style do-it-yourself nation – is unrealistic and undesirable. Still, the idea of a political community in which territory is largely irrelevant for certain political functions is worth considering. Thus far, it has been regarded as radical because it was promoted by anarchists and like-minded people looking for disruptive technologies to replace the nation-state. But as technology becomes more developed, it is just a matter of time until the idea will crystallise.

Political community

Even if the idea crystallises, can we really call cloud networks a 'political community,' or would they be like a 'community of video gamers,' to use Spiro's analogy, or just an addition to global civil society (Bauböck, Post, Milan)? The essence of the community I envision is indeed political, having members who share a common bond (say, the protection of animal rights) and seek to become part of national (and mainly international) decision making. There are similarities between cloud communities and global civil society (Bauböck, Post, Milan) as they are both voluntary, political in nature, civil (in the sense of non-governmental), and usually non-profit. But there are some differences. The global civil society is not composed of sovereign political entities where decision making is based on a 'one person, one vote' principle; global civil society organisations are acting *on behalf of* a group, while decentralised cloud communities can form themselves democratic collectives acting on a global scale.

Do cloud communities merit being called 'political communities'? It depends on the nature of such a community and how it will be developed. At least three components should come together: 1) members should have a self-perception as belonging to a collective entity, a shared consciousness of forming a political community; 2) members should have political relations and act with a collective responsibility; 3) members should be capable of acting collectively with regard to some functions. Take immigrants, for example. If all international migrants – more than 250 million people in 2017 – joined a virtual community, it would be the world's fifth largest 'country' (after China, India, USA, and Indonesia). It could act as a self-governed collective at the international level, negotiating with states and UN agencies, collecting taxes, and promoting immigrant rights worldwide – all based not on representatives or NGOs, but on direct decision-making by its members.

Digital coercion

What about coercion – how can there be a political community without a recourse to force (Bauböck, Post, Blake, Dumbrava)? Normatively, the coercive force of law can be independent of the state or its territory; it requires authority. Such authority exists also in a blockchain-based community with one main difference – it is decentralised. If, for example, the 'migrant cloud community' decides collectively to stop migration to a certain country that does not respect migrants' rights or to buy

products from certain retailers, and a migrant who is a member violates the rules, s/he can be sanctioned (through fines, suspension, limited access to rights/data, or termination of membership). As long as membership provides some benefits, particularly the ability to influence and shape decisions that affect the member's life, these sanctions are not minor or trivial.

Technologically, since membership is virtual, coercion is realised via software. As Shapiro notes, one's virtual identity (or 'global persona') is programmed to obey the community's decisions ('coercion is achieved through design and programmability, without violence'). In fact, state laws represent 'weak coercion'; there are papers that set rules (e.g., a prohibition of murder or crossing a red light) and one decides whether to follow the rules or violate them, in this case there are punishments and sanctions. Internet protocols are one step further. They are a form of 'strong coercion'; internet codes (e.g., restrictions and blockings) are stronger than papers because the law of the software is more difficult to violate – it is not in the discretion of an individual but requires knowledge and effort. A digital society represents a form of 'absolute coercion.' Transaction monitoring (e.g., voting, tax, or registry) is governed by blockchain rules that one cannot violate.

Socially, 'punishment' in a digital society is of a different type. A person cannot be sent to jail, but her reputation can be discredited. In the digital era, reputation capital is a valuable asset and a factor for providing services and products (think of Airbnb, Uber, eBay). In other words, online reputation has a real-world value. As Al Tamimi observes, 'A punishment in terms of such social devaluation imposed by the cloud state is conceivably more painful and restricting to the individual than traditional methods of punishment, such as fines or jail.'

Functional sovereignty

The territorial dimension of states has been seen central to citizenship (Bauböck, Post, Blake). Indeed, territory is considered the state's most characteristic feature; states are, by definition (Article 1, Montevideo Convention, 1933[2]), territorial units. Territory is considered necessary for assuming most of the normative functions of the state – for instance, as a source of security and identity, and for managing natural resources. Against this background, the concept of a deterritorialised state – or cloud communities that would replace the state and fulfil all of its functions – is politically inconceivable. But this does not entail that none of the state's essential functions can be reconceptualised. Cloud communities are not a state-replacement, but an improvement – they seek to add a circle to the already dynamic and multi-layered rich dimensions of citizenship. They are not supposed to act in the physical world – and thus have no sovereignty on issues like murder (Post) – but to govern the transaction of values or data that exist in the digital world (voting, registries, certificates, etc.). However, as cloud communities become politically more important, what happens there will not remain confined to the cloud but influence real-world political decision-making.

The idea of 'concentric circles' of citizenship – to use Cicero metaphor – with each circle having a different normative function, is not foreign to the theory of sovereignty. There are three options: cloud communities can be seen as sub-sovereign entities, semi/quasi-sovereign entities, or functional sovereign entities. Let me focus on the third option – functional sovereignty. Under this approach, sovereignty is divided by functions, with each being governed by a different entity. Think of federal systems, a condominium of states, mandate/trusteeship, autonomy (e.g., Quebec or Puerto Rico), or municipalities (where certain functions are governed by local sovereignty). Divisible sovereignty can be exercised over territories – e.g. Andorra, which was a condominium before independence in 1993 and still had two heads of state (the French president and a Catalan bishop) – or peoples. Sovereignty can be divided between political entities, as in federations or in the European Union, or between

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[2]   Available at http://avalon.law.yale.edu/20th_century/intam03.asp

political and nonpolitical entities – think of religion (in Israeli law, for example, religious law is sovereign in family issues). The idea of functional sovereignty, as coined by Willem Riphagen in 1975,[3] enables entity *A* to have sovereignty over social welfare, entity *B* to be the sovereign on financial issues, and entity *C* to enjoy sovereignty over security – all in the same territory. It also makes it possible for different political authorities to exercise functional sovereignty over different peoples in the same space. The switch is from a jurisdiction over territories to a jurisdiction over functions, peoples and services. As this is not a new concept, we can understand how it could be applied to blockchain-based cloud communities as well.

The normative functions of cloud communities remain an open question in the debate. My focus has been on global topics – global warming, the environment, and other issues of global sustainability – but it is for the states to decide which functions to delegate to self-sovereign communities. Ultimately, states would set the boundaries and decide the sensitive areas in which sovereignty cannot/should not be divided or shared.

Coda

We can construct theoretical models of digital citizenship but, as this debate has shown, there are plenty of uncertainties – political, technological, and psychological ones – before it can become actually operative. I agree with Milan that 'much work is needed . . . before we can proclaim the blockchain revolution.' In particular, I share the concern about global inequality generated by ideas of cloud communities due to lack of internet access (Dzankic, Ypi, Kochenov) – this gap, however, has tremendously (and rapidly) narrowed and in 104 states more than 80 per cent of the youth population (aged 15-24) are now online. The situation will further improve if a right to internet access is universally recognised. And I cannot but share Bauböck's worries about the tyranny of the majority in the cloud – addressing it is a matter of constitutional design of voting mechanisms (note, however, that there will be judicial review, decisions that require supermajority, and perhaps even veto rights in the digital world as well). Discussing these (and others) concerns will keep theorists and policy makers busy in the years to come. While the focus of this debate is on global citizenship and virtual communities, I see it as a broader invitation to reflect on the nexus between new technologies and the future of citizenship.

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[3] Riphagen, W. 1975. 'Some Reflections on Functional Sovereignty', *Netherlands Yearbook of International Law* 6: 121-165.

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