Technological advances sometimes alter our experience of well-established notions. The night is as dark today as in the 18th century. However street-lights 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.\textsuperscript{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.\textsuperscript{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

\textsuperscript{1} For an overview of the technology and its applications, see: UK Government Office for Science (2018), \textit{Distributed Ledger Technology: beyond block chain.} Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf

\textsuperscript{2} Archibugi, D. (2008), \textit{The Global Commonwealth of Citizens: towards Cosmopolitan Democracy}. Princeton, N.J.; Woodstock: Princeton University Press; Falk, R. (1994), ‘The Making of Global Citizenship’, in B. van Steenbergen (ed.), \textit{The Condition of Citizenship}, 127-140. London: Sage.
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. 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 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. A tiny minority exercises consent to change citizenship through

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3 For an explanation in this sense, see Dumbrava, C. (2017), ‘Citizenship and Technology’, in A. Shachar, R. Bauböck, I. Bloemraad & M. Vink, *Oxford Handbook of Citizenship*, 767-778. Oxford: Oxford University Press.

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

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

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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/](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](http://cadmus.eui.eu/bitstream/handle/1814/29318/RSCAS_2014_01.pdf)
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 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 ser-

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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-fare-well-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.
vices, 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 nego-
tiate 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 commu-
nity, touching upon the interests of a larger cohort of virtual denizens. On a 
conceptual level, the right that technology enables, if adequately recognised 
and framed within the legal structure of national citizenship, could funda-
mentally 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 plural-
ity 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 opportu-
nity in other states. Hence a state would accommodate virtual denizens to 
protect the interests of its own citizens. Further, states may have an eco-
nomic, 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

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.
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.

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