



THE POLITICS OF PLATFORMIZATION

AMSTERDAM
DIALOGUES ON
PLATFORM THEORY
INTERVIEWS BY
GIANMARCO
CRISTOFARI

**THEORY
ON
DEMAND**

A SERIES OF READERS
PUBLISHED BY THE
INSTITUTE OF NETWORK CULTURES
ISSUE NO.:

48

THE POLITICS OF PLATFORMIZATION

AMSTERDAM
DIALOGUES ON
PLATFORM THEORY

INC Theory on Demand #48

The Politics of Platformization: Amsterdam Dialogues on Platform Theory

Interviews by:

Gianmarco Cristofari

In conversation with: Davide Beraldo and Giovanni Rossetti; Balázs Bodó; Letizia Chiappini; Niels van Doorn; Anne Helmond; Joris van Hoboken; Paddy Leerssen; Geert Lovink; Stefania Milan; Niels ten Oever; Thomas Poell; Martijn de Waal.

Copy editors: Tripta Chandola, Damian Borovsky, and Benedetta Rossi.

Illustrations: Carlotta Artioli

Cover design: Katja van Stiphout

Design and EPUB development: Tommaso Campagna

Printing and binding: GPS Internationale Handels Holding GMBH

Published by the Institute of Network Cultures, Amsterdam 2023.

ISBN print: 9789492302984

ISBN EPUB: 9789492302991

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This publication was funded with the help of Global Digital Culture, University of Amsterdam.

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The logo for the Institute of Network Cultures features the text "Institute of network cultures" in a lowercase, sans-serif font. Above the text is a stylized graphic of a network, consisting of numerous small circles connected by thin, overlapping lines, creating a web-like structure.

The logo for Global Digital Cultures consists of the words "Global", "Digital", and "Cultures" stacked vertically in a bold, sans-serif font. Each word is underlined with a horizontal line.

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ACKNOWLEDGMENTS

Successful Misunderstandings

I have always considered Plato's late dialogues to be his philosophical dialogues in the true sense of the word. In them, one person speaks almost without interruption; the objections of the others would hardly fill half a page. They say: 'You are completely right', 'Quite clearly', 'It is so.'¹.

I hope this is not the case for the following interviews, as I have tried to make them as dialogical as possible. A dialogue differs from a dispute because speakers are not trying to convince someone that their position is the right one. This may allow for the emergence of knowledge *between* the speakers; and as communication is a successful misunderstanding, I also hope these interviews, in trying to connect some of the dots of platformization, have led to misunderstandings of various kinds.

I am extremely grateful to Geert Lovink for accepting me at the *Institute for Network Culture* during a global pandemic; for confirming that there was a cool topic to be further researched; and for supporting and guiding me in the publication of this book with such an untimely form in the age of publish or perish.

I want to thank all the interviewees for their kindness, active participation, and sincere involvement. Conducting the interviews turned out to be *fun*, something which I personally value as the best condition for the production of good content.

I am also grateful to Global Digital Culture for funding the project, thus allowing the editing of the interviews, the printing of the physical copies of the book and the book launch event.

A very special place in this acknowledgment goes to my two Amsterdam stars Alexandra Giannopoulou and Valeria Ferrari. You made my period abroad special, notwithstanding the many pressures of academic life, and I hope to see you again in the future. It is the creation of kinship outside the family, and Donna Haraway approves. Nicola Zengiaro has been my emotional, philosophical and affective peer reviewer over the last Ph.D. years. Thanks to you for the many conversations on semiotics and digitization and to Marco Dal Lago for those on economics. Thanks to my dear friend Alberto Micheletto, with whom I discussed the philosophy of metaphors, and Alessio Andriolo for introducing me to more critical studies on contemporary technologies. Thanks to the Mexican prince Jordi Guerrero (your contribution too has been fundamental) for the convivial discussion on the philosophy of technology. Thanks to Claudio D'Aurizio for reading and providing insightful comments for the essay. I would also like to thank all the crew from the Institute of Network Culture: Chloë Arkenbout, Sepp Rinze, Laurence Scherz, Giorgiana Cojocar, and all the others. A very

1 Slavoj Žižek, Philosophy is not a Dialogue, posted on 18.10.2021 by Irfan Ajvazi on the Facebook group "Žižek's Book Club".

special hug goes to Tommaso Campagna, whose psychological, affective, and practical support has been invaluable. Next project might be a documentary?

During my time in Amsterdam, I also stayed at the Institute for Information Law (IVIR), and I enjoyed the company of an *engagé* intellectual group: Marijn Sax (my favorite analytical moralizer), Paddy Leerssen (glad to discuss platforms with you, and involving you in the project), Jef Ausloss (we need good activism in the seats of power), Jill Toh (keep the fire on), Naomi Appelman, Edoardo De Martino, Ljubisa Metikos, Tom Barberau, Eva Van Der Graaf, Theresa Seipp, Gionata and the entire IVIR management. As a side-effect of this project, I became friend with the amazing 'Italian crew' of Amsterdam researchers, which includes Davide Beraldo (good Luhmannian in town), Letizia Chiappini, Giovanni Rossetti and Daniel Palumbo.

I have to thank my fantastic flatmates and related folks of the last years: Alberto Checchi, Giampietro Marcon, Niccolò Rossi, Greta Giordano, Martina Massignani. Nicola Zolin, Francesco Ongaro, Giovanni Centofante, Elena Calsamiglia, Silvia Rizzuto, Vittorio Sapienza, Samuele Morellato, Renato Rigon, Tony Zanatta, Yasmin Karam. Thanks for listening to my rants about platforms over lunch or dinner. Thanks to my family: my mother Annalisa, my sister Sofia and my aunts Daniela, Maurizia and Luci, Alberto.

One special mention also goes to the Facebook group *Scambio Theory*, populated by nice people such as Flavio Pintarelli and Silvio Lorusso. My thoughts also go to the many people I have met during these years: Antonio Dante Santangelo, Gabriele Giacomini, Paolo Gerbaudo, Stella Maria Kochling, Silvia Rizzuto, Annagiulia Canesso, Carlo Zanella, Emanuele Perrone, Andrea Pellicoro, Federico Sartore, Michele Stratta, Davide Montanaro, Andrea LaGanga, Stefano Cattelan, Daniele Bucci, Marco Giacomazzi.

I want to thank also my PhD supervisors Benedetta Barbisan, Ronald Car and Natascia Mattucci for helping me with understanding was I was actually researching, for the stimulating conversations and for showing that academia can be a nice place. A warm hug to my Ph.D. colleagues Arianna Porrone, Davide Zoppolato, Chiara Salati, Alessandro Graciotti, and Omar Pallotta. Thanks to my copy-editors Tripta Chandola, the great Damian Borovsky, and Benedetta Rossi.

Thanks Carlotta Artioli for the beautiful illustrations!

Finally, thanks to my Dutch bike, my laptop, and the Yo-Yo coffee shop.

This book is dedicated to my father, whose example is always on my mind.

INTRODUCTION

The Platform is a Circle

In the circle is hidden a positive possibility of the most primordial kind of knowing, and we genuinely grasp this possibility only when we have understood that our first, last, and constant task in interpreting is never to allow our fore-having, fore-sight, and fore-conception to be presented to us by fancies and popular conceptions, but rather to make the scientific theme secure by working out these fore-structures in terms of the things themselves.

Martin Heidegger, *Being and Time*

As a middle-class child living in the rich province of the North-West of Italy, I had relatively early access to pay-per-use, wired internet routers. Internet connection was still slow and noisy, and every time my mum would take a call in the evening, the connection would drop. But Internet connection offered unlimited access to self-chosen information and searches, as well as real-time communication software like MSN and online gaming.

I became an online gamer in trying to procrastinate difficult homework for school, an admittedly fun alternative. One day I landed on a website with a sci-fi graphic design made of spacecrafts and galactic empires. It was called *OGame*¹: vague enough to keep its contents undisclosed, but cool enough for a kid, with its standardized futuristic aesthetic.

But eventually, in less than one year, *OGame* turned out to be a black hole for my time and for my life. I had to decide between playing *OGame* and hanging out with friends, between *OGame* and studying, between *OGame* and sleeping. My grades at school started dropping.

OGame “is a browser-based, money-management and space-war themed massively multiplayer online game.”² As opposed to later online games like *World of Warcraft* - which needed broadband and real-time connection – *OGame* was designed to work on the affordances of the unstable connection. In *OGame* you could be the emperor of a galactic empire, controlling it remotely. You selected a universe, created an account, and started with a planet. By mining resources on that planet, you could create a fleet and colonize other planets (up to eight). Defenses could be built on the planet to protect from other players’ attacks. Fleets were constructed to “farm” other players, stealing their planetary resources and converting the debris of their destroyed fleets into scrap. You were the one taking decisions, not the one fighting the actual wars. Everything was based on a pure imaginative process. You could visualize the number of spaceships you had parked on your planet, and the actual battle with other spaceships only consisted of a report sheet made of mathematical statistics. What about *OGame*, then, kept you connected?³

1 *Omega* in ancient Greek means “great O”. In eschatology, it is the symbol for the end of everything.

2 <https://en.wikipedia.org/wiki/OGame>.

3 In a prize-winning episode of *South Park*, the Canadian Minister of Gaming explained it as follows: “The

The game did not require particular skills – in fact, a pre-adolescent could compete with much older players who were regularly playing from work. But in time, *OGame* managed to create an emergent ecosystem of meaning, emotions, and experiences that kept you more and more connected. Like other management games, it was about the will to take certain risks with the right timing; but in the long term, *OGame*'s design and competitive logic created a raise to the top: the more you stayed on the computer screen, the stronger you became in the ranking, and so did your team. In this sense, time was the universal token, making everybody equally addicted. But time was also important in another sense: to attack and destroy a fleet, it needed to be parked on a planet. To avoid this, everybody would need to make calculations to send the fleet to another planet so that it would come back exactly when we would be back from school. Here's the *design perversion*: if I was accidentally late – either because of a setback or a change of plans – top players, lurking in the darkness of their offices, were ready to spy on your planets. They would detect your inactivity and attack your precious fleet. Jokes would spread in the community about going to jail for the time to finally play *OGame* properly.

The second element that kept you connected was the creation of a community. *OGame* was an ecosystem made of three spaces of interaction following different rules: first, *OGame*'s browsing page (the actual game); second, *OGame*'s forum; finally, MSN messenger.

As for the game, when I started with my first planet, I felt alone and powerless. The universe was dark, and I had little chance of surviving by myself. The image of the state of nature finds a suitable application here⁴, and very soon I realized I needed to either create an alliance or join an existing one. I started to meet people and added them on MSN, and I later joined an alliance MSN group.

The *forum* provided multimedia and performative space for further interactions. Players used to post reports of their fights, together with battle tactics and a detailed reconstruction of the execution. People commented, either with admiration or rage. The players initially came to use the forum in dead moments, but then they became interested in following a certain argument or reading their ally's last polemical comment. Thanks to the forum, players turned reflexively on themselves, creating a community. A public arose, one that shared an exclusive language made of abbreviations and neologisms. As one *OGame* player's report states: "Again and again members of the community get married. I've been guest at so many weddings and baptisms none of which would've been possible without *OGame*!". With the CEO of Airbnb, we can say that the product already was the community⁵.

truth is, a very small percentage of people who download a freemium game ever pay for them. It's all about finding the heaviest users and extracting the most amount of cash from them. That's how you get addicts to pay two hundred bucks for a game that is not even worth 40 cents" (Season 18, Episode 6: 14.03).

- 4 Probably only here, as it is a loose image for explaining how the need for political organization arises. Society has no starting moment as depicted by the contractual view of Locke, Hobbes and Rousseau; but videogames do.
- 5 "I think one of the things that makes Airbnb a bit different from other technology companies is that at other technology companies the product is something you can hold in your hand - It's a piece of software. Our product is our community. It's you. It's people." *Airbnb, Celebrating Our Community*,

If the forum allowed for external communication between players, MSN messenger allowed for the team-building of your alliance. Behind my nickname and avatar, I got to know people much older than me and got along with a retired engineer. *OGame* quickly became a universe of meaning by itself: the more you played, the more reasons you had to keep on playing, and the more you had to lose. To play at a decent level you needed at least six or eight hours per day.

One day I woke up and, surprisingly, the interface of the game had changed. It seemed like a new feature had been implemented. I clicked on it and found out that something named *dark matter* had been introduced. The intriguing reference to the mysterious object of investigation for physicists upsetted me upon discovering that it was just a way to become stronger by paying real money. Dark matter would turn into additional resources, which ultimately meant a day made of more than twenty-four hours. *OGame*'s power used to emerge mainly via dedication; you could now play with the new, alien variable of money. A feature that traded money for resources – and thus, money for time – was perceived as very unfair. Money wasn't welcome, but nothing could be done, and I kept on playing.

I now see *OGame*'s ecology as an allegory⁶ for today's gamified social world. With a paraphrase, we could call it the 'platformization of everything'⁷. It would be wrong to say that *OGame* was a platform, as the following interviews will clearly show. But if these dynamics now sound familiar, it is because they made their way into most of the fields of human experience, and are now used by corporations, governments and institutions to cybernetically manage populations, citizens, consumers, users, and subjects. If we look at the three main critical paradigms of digital technologies – addiction, attention, and data extraction⁸ – they reproduce and recombine some basic gaming principles.

The Notion of Platformization: an Amsterdam Movement of Platform Studies?

It was the Cambridge Analytica scandal that revived my interest in technology-related topics. I started to work as a consultant in data protection, but I soon grew unsatisfied with the daily life of that occupation. The new obsession of business circles was simply called 'data': the imperative was to gather them, structure their flows and figure out how to turn them into value. But the hype around data completely ignored the material conditions of their production, as well as the nature of the organizations producing them. A research focus on digital and analogical platforms emerged as a necessity for better comprehending what was going on.

Youtube, 7 March 2017, https://www.youtube.com/watch?v=zS6zVHJYopg&ab_channel=Airbnb, quoted in Muldoon (2022) *Platform Socialism*, 44.

6 An allegory is an abstract concept expressed through a concrete image.

7 Vaidhyanathan (2012) *The Googolization of everything and why we should worry*.

8 For some examples and critics of those paradigms, see Citton (2016) *The Ecology of Attention*; Schull (2014) *Addiction by design*; Wu (2016) *The Attention Merchant*; Williams (2018) *Stand out of our light*; Zuboff (2019) *The Age of Surveillance Capitalism*.

With platforms, I was experiencing a shift of consciousness similar to that caused by the gaming experience. Ultimately, in order to research them, I had to inhabit them: there seemed to be always a reason not to leave. I started to believe – in the sense of McLuhan’s ‘I wouldn’t have seen it if I hadn’t believed it’ – that there was something radically new in the platform organizational form. Like videogames, I was still simply spending too much time on it. I was aware of it, but I couldn’t stop it.

While trying to decide (during a global pandemic) where to move for the period abroad of my PhD, I noted an unusual concentration of good books and papers coming from Amsterdam circles and scholars. Amsterdam not only had that fundamental focus on media studies – a field of research obliterated by Italian academia for historical reasons, but obviously central for studying platforms – but, as media became supercharged with economic value, it seemed that the already blurred boundaries of that field also started to melt. Why were so many researchers working on such a topic in a relatively small city like Amsterdam, and what was specific about their research?⁹

The fact is that since the 2009 article by Tarleton Gillespie¹⁰ – widely discussed in the interviews and to which the title of this book is a memetic reference – both academic and public discourse continues to refer to the ‘platform’ as such. What I found interesting is that platform studies (and platform theory) as a field of research, despite the relevant differences of its sub-fields, all rely on a shared *metaphor*. As the birth of cybernetics shows, agreeing on a set of metaphors is maybe the only way to conduct interdisciplinary or transdisciplinary research. Or, like in the case of the *network*, I believe that an analytical understanding of the platform can only reach a certain point. Agreeing on a keyword¹¹ is what opens up the research. This does not mean relying on an empty signifier¹²; it is rather a “disposable theory” in Castell’s sense, one that can be rearranged according to the analytical task at hand. A theory that is “flexible, without fix hierarchies, with no clear beginning or end” and “easily reconfigurable, with elements to be dropped or added”¹³. It should identify, empirically and theoretically, a unifying trend across the many domains it covers. The political question, therefore, becomes:

9 I have also asked myself the reasons why these research movements took place in Amsterdam rather than other larger European cities. Three reasons can be listed. First, an intrinsic liberal culture such as the Dutch one, that favors interdisciplinary research and cares less about academic disciplinary divisions than countries like Italy; second, the lack of strong schools or traditions of thought such as the French or the German; third and most importantly, the Dutch have always been familiar with infrastructure for historical reasons connected to their territory. An Italian living in Amsterdam is amazed by the permanent, super-efficient renovation of the city pipes and streets. On this last point see the interview with Niels ten Oever *Policy by Infrastructure: Between materialism, Faith and Make-Believe*.

10 Gillespie (2010). *The politics of ‘platforms’*.

11 That the ‘platform’ is one of the keywords of our time has been stated by Lovink (2017) *Foreword*. This celebratory movement of the platform keyword can be found in even earlier publications. See for instance Simon (2011) *The Age of the Platform: How Amazon, Apple, Facebook, and Google Have Redefined Business*. The lack of analytical rigor of such an approach should not lead to academic despair: in the social sciences, abstract metaphors such as the ‘state’ or the ‘market’ have always been used with good profit. For an analysis of the market metaphor, see Nishibe (2016) *The Enigma of Money*.

12 For an interesting critique of the platform keyword, see the interview *Platform Skepticisms and Private Trust Infrastructures* in the present volume.

13 Stalder (2006) *Manuel Castells*, 200.

is this a pragmatic move? How much space for resignification does this word *platform* have? Does it make sense to see platforms in the world, rather than something else?

The notion of platformization - initially developed in Amsterdam by Anne Helmond - by processualizing the platform, took the research a step further. More concrete than the ephemeral datafication (that is nevertheless one of its core components) and somehow more precise than the extremely broad concept of digitalization - which turned out to be a normative tool to justify budget allocation – platformization presents a fractal character and a great pervasiveness.

Platformization is therefore the topic of this book. More precisely, I aim to show how platformization is a central category of today's politics, something that should follow globalization and financialization in our understanding of societal dynamics. These researchers have made valuable attempts to frame this phenomenon from a theoretical perspective, and their work deserves attention. We may address it as the "Amsterdam school of platform studies" or "Amsterdam school of platform theory" - and I am not the first one to propose this label.¹⁴ Even better, it could be an Amsterdam *movement*, as schools quickly tend to dedicate time to administration¹⁵. The Amsterdam scholars seemed to favor a balanced approach: very much aware of the political economy behind it all, starting from the consequences of computation in the organization of society, but also trying to avoid a 'platform essentialism': one can start from the platform, but not end with it¹⁶. Ultimately, their legacy can be found in this notion of platformization and in an understanding of the platform as a *reprogrammable data infrastructure*.

Furthermore, in line with a more 'American' and speculative line of research, I was interested in making the relationship between platformization and cybernetics explicit, therefore considering platformization as an epistemology of the social. In this sense, I share Barns' reading of platform urbanism as an epistemological tool and strategy,¹⁷ but with platformization positioned at the next 'level of recursion'. We can say that it is not about reading platformization with pre-established concepts; on the contrary, it is about using platformization to rethink some of those established concepts.

14 Gorwa (2019) *What is Platform Governance?*, 858.

15 For Gilles Deleuze, a "'school' is awful for a very simple reason: a 'school' takes a lot of time, one turns into an administrator. [...] Surrealism was a "school", with scores settled, trials, exclusions, etc. [André Breton created a "school" [out of Surrealism]. Dada was a movement". Deleuze, Gilles; Parnet, Claire (1988), *L'Abécédaire de Gilles Deleuze*.

16 Spoiler: the problem is usually identified with the neoliberal environment and with a model of innovation that leaves everything to the market. Besides that, as always with the advent of the new and as for the digitalization discourse, the discussion on platformization started being framed by opposing characterizations of 'apocalyptic' intellectuals - à la Zuboff, who sees platforms as having x-rays to read our mind - and 'integrated' intellectuals that see no novelty in it, or that do not even consider it a relevant category. For this distinction, coming from a time when television only had few channels, see Eco (2001), *Apocalittici e Integrati*.

17 For Barns, urban studies need "diverse epistemological strategies through which to interpret urban life, in ways that remain alert to different registers of socio-spatial experience, encompassing but also extending beyond ontologies of control and appropriation". See Barns (2020) *Platform Urbanism*, 20.

Redesigning Platformization

Since attempts at forecasting should not be left only to algorithms, we may say that, according to the Amsterdam scholars, despite the Heraclitean nature of these infrastructures, there is some future for platformization. What is ongoing is a paradoxical process of institutionalization of platforms¹⁸, and it is not by chance: as discussed in the interviews¹⁹, we are witnessing a normative attempt by the European Union - which presents itself as the regulatory third way between the USA and China – to steer the path of platformization by regulating it. Hence, also by institutionalizing it. Through regulation such as the GDPR, DSA, DMA, AIA, Data Act, Platform Labor Regulation²⁰, and also via sectorial regulation, the EU not only takes platformization as an inevitable phenomenon, but it allows it to thrive. An example is the recent case of the Payment Service Directive II, which obliges banks to open their databases to third parties technology companies²¹. Other contemporary trends of platformization include Fintech, care platforms, and identity platforms²².

Putting on the legal lenses, I am tempted to suggest that as platformization is something that changes the forms of the organization of every functional sub-system of society, its repercussions are not only political, but also of constitutional nature²³. It is not only about regulation, because while regulation “tries to influence the actors’ behavior externally”, here the internal structures of the internet and of its collective actors have to be changed²⁴. As such, platformization may be turned into a bold experiment of constitutional design, both *internally* (what rules and standards should the platform design follow, what checks and balances ought to be embedded, and how?) and *externally* (how would an institutional system to decide on the legitimacy of platforms design look like? ²⁵).

18 See the Keyword *Institution*.

19 See especially the interview with Joris van Hoboken and Paddy Leerssen.

20 General Data Protection Regulation; Digital Service Act; Digital Market Act; Artificial Intelligence Act.

21 See Ferrari (2022) *The Platformization of Digital Payment*, for an analysis of the discourse and sociotechnical imaginaries guiding European policy-making in the fintech domain. The policy agenda is informed by a notion of ‘consumer interest’ which mirrors an idea of user technological empowerment as promoted by technology companies.

22 See the interview with Niels Van Doorn and the one with Anne Helmond.

23 If we interpret the computational as a real *revolution* that follows the industrial one, we are confronted with a new version of an old problem. For instance, Don Price, in his book *The Scientific Estate* (1965), pointed out a profound dilemma for the American constitutional system: the rise of science and scientific technology in the nineteenth and twentieth had altered the basic rules and procedures of U.S. government established at the time of the founding. He identified three developments that made “our traditional reactions – our automatic political reflexes - unreliable in dealing with our present problems.”. The scientific revolution had moved the public and private sectors closer together; brought a new order of complexity to the administration of public affairs; and upset our system of checks and balances in government. See Winner (1978) *Autonomous Technology*, 152.

24 Teubner (2013) *The Project of Constitutional Sociology: Irritating Nation State Constitutionalism*, 44. For him, in the case of Google, a constitutional change would imply a ‘division of powers’, dividing the ‘software provision’ from the ‘service provision’ and subjecting them to different legal regimes.

25 For Julie Cohen, this institutional change is very much needed, since what “seems certain is that reforms that simply adopt yesterday’s methods are unlikely to succeed. Just as the most effective

The fact is that contemporary institutional arrangement, in its historical development, emerged by recombining different mediums of the law (such as language, writing, and the printing press) and, during modernity, law largely depended on the affordances of the Gutenberg Galaxy²⁶. But as Donald Trump once said, “the whole age of the computer has made it where nobody knows exactly what’s going on”²⁷. Modern constitutions and modern rights have been written at a time when computers hadn’t been invented and certainly need to be updated; but is not only about updating constitutions. Rather, if it still makes sense to write down some constitutional principles on paper, why not take them into account when building the digital infrastructure, in a process of platform constitutionalization?

The operation is pretty complex but worth a try. Concepts such as media freedom do not fully capture a transition in which the computational infrastructure becomes the necessary precondition for the exercise of almost every subjective right; nor the very notion of subjective right, grounded on private property, is able to grasp this shift²⁸. Paraphrasing legal scholar Stefano Rodotà while playing with a bit of Latin, what is needed is something that resembles a *right to a common infrastructure*, an *Habeas Infrastructura*²⁹. In other terms, in front of these environments in which *infrastructura facit legem*³⁰, it is the legal

institutional changes of a previous era engaged directly with the logics of commodification and marketization, so institutional changes for the current era will need to engage directly with the logics of dematerialization, datafication, and platformization, and will need to develop new toolkits capable of interrogating and disrupting those logics”. Cohen (2019) *Between Truth and Power*, 270-271.

- 26 For the long systemic argument of the differentiation of society see Luhmann (2012b) *Theory of Society*, chapter 4. For a shorter description of the mode of existence of the law from a Latourian perspective, see Hildebrandt (2015) *Smart Technologies and the End(s) of Law*, chapter 3.8.
- 27 Bankoff (2016) *Trump Says ‘Nobody Knows Exactly What’s Going On’ Because of ‘Computers’*. <https://nymag.com/intelligencer/2016/12/trump-nobody-knows-whats-going-on-because-of-computers.html>
- 28 This is a common topic in the work of Stefano Rodotà, relating to the debate on the commons. See Rodotà (2021) *Tecnologie e Diritti*. For the (mis)interpretation of the right to private property in legal practice and theory, see Rodotà (2013) *Il terribile diritto*. For a discussion of the relationship between subjective rights and collective action, see Ausloos; Toh; Giannopoulou (2022) *The role of collective action in ensuring data justice*.
- 29 For a discussion of this idea, see the interview with Niels Van Doorn. The *Habeas Corpus* was a writ of the common law tradition, already present in the 12th century, through which a person could report unlawful imprisonment to a court; the custodian would have to declare on what day and for what cause he was arrested. When Stefano Rodotà proposed an Internet Bills of Rights – an idea later developed by Tim Berners-Lee – he was aiming for a *Habeas Data*: a right to informational self-determination. However, as discussed in the interviews, it doesn’t make sense to consider data without the infrastructures for data production.
- 30 This is a meme of Hobbes’s famous sentence (“*Auctoritas, non veritas, facit legem*”) later reinterpreted by Schmitt in the first line of *Political Theology*: “sovereign is he who decides on exception”. To complement a design-centric view one should also add the more ‘traditional’ critique of power and design: it is the processes by which authorizations are built, maintained, contested and changed which is at issue in any social study of built spaces and technology. [Bernward (1999) *Do Politics have artifacts?*] Other arguments against the feasibility of techno-regulation can be found in Gutwirth; De Hert; De Sutter (2008) *The trouble with technology regulation from a legal perspective*. For them, this notion of regulation is a political rather than legal practice that would require judges to become activists; it is also a notion of regulation that “does not give a chance to

system itself that can be institutionally designed to produce ‘constitutional³¹’ values. For instance, a process of standardization and constitutionalization of platforms³² might need to separate ownership and governance.

Finally, regardless of the private-public distinction, there is a need to stabilize the structures of expectations of users and complementors in order to guarantee an effective level of protection inside the platform. A need that passes through code-driven systems as “regulatory tools *per se* and as the building blocks of the onlife³³”. I believe that the legal system as the “immune system” of society³⁴ should assert its role aside from authority and power contestations, against the advent of the “death of law” caused by technological management³⁵.

the unexpected possibilities that can emerge from the development of new technologies that he wants to regulate”.

- 31 Which is clearly a problematic term, but it is understood by many constitutional scholars in its ‘digital’ version as the extension of fundamental right protection and the balancing of power beyond the nation-state. See for instance Celeste (2019) *Digital constitutionalism*. In any case, even in the various European traditions, there are relevant differences regarding constitutionalism. What in France follows from Montesquieu *Esprit de la lois* is the principle of division of power (legislative, executive, judicial), and later on in Benjamin Constant’ version of ‘guarantorism’; instead, the *Rechtsstaat* in Germany is grounded on the idea of the impersonality of power, that focuses on the development of control of the public administration via independent courts; finally, the rule of law from the English tradition – theorized by Dicey – is not focused on the idea of the state but on that of government. In more modern times, constitutionalism came to refer to the idea of the practical supremacy of the law, with three characteristics: a written constitution, which is rigid, and the existence of an organ that checks on the just character of the law and resolves conflicts between the other organs of the state. See Matteucci(2016) *Costituzionalismo*, 203-213.
- 32 For a description of the process of constitutionalization, see Loughlin (2010). *What is Constitutionalisation?*; while for an application to digital environments, Celeste (2021) *The Constitutionalisation of the Digital Ecosystem*, who makes a point similar to the one I am making. For Teubner, answering the question of “how is constitutional theory to respond to the challenges arising from these two major trends of privatization, globalization [and platformization]?” means moving beyond the nation-state in a double sense: “constitutionalism moves into the transnational context and into the private sector”. Teubner (2010). *Fragmented Foundations: Societal Constitutionalism beyond the Nation-State*, 328.
- 33 Diver (2022). *Digisprudence: Code as Law Rebooted*, 6, which is a notable attempt to reinvigorate Lessig’s thesis from a more constitutional and pluralist perspective than one that focused only on transparency. See also Floridi (eds 2015) *The Onlife Manifesto*.
- 34 Such is the view of Luhmann: the law allows “the reaction of society to unforeseen situations that lead to disruption (i.e., to contradiction and conflict), despite lacking complete knowledge of all the factors involved”. Baraldi et al (2021) *Unlocking Luhmann*, 127. See also Luhmann (2008) *Are There Still Indispensable Norms in Our Society?*, and for a coherent reconstruction of Luhmann’s legal theory see Thornhill & King (2003) *Niklas Luhmann’s Theory of Politics and Law*.
- 35 See Lucy (2022) *The Death of Law: Another Obituary*; that is why the law needs to engage with technological management itself. In another version of this idea, it is not the law to be in danger of death, but only its general character and the equality before the law. See Garapon; Lassègue (2018) *Justice digitale*, cp. IX: “le numérique consacre la disparition de la règle collective. Il organise un déplacement general des mediations, qui deviennent inaccessibles”. (255)

The Structure of the Interview, its Serendipitous Methodology, and the Final Essay

The interviews are organized around three main thematic lines. The first theme revolves around the pragmatic and cognitive dimension of platform metaphors and definitions. Methodologically, a truly transdisciplinary research program acknowledges that when there is no fixed knowledge – this is, in my opinion, still the case with platformization – an analytic fragmentation might be of little help. Instead, there are other ways to seek “order out of chaos”³⁶ – metaphors being one of them, guiding us in the theorization of the unknown via family resemblances. I was interested in the *semantics* of the word ‘platform’, and I thought that a global overview of the various metaphors employed to describe the platform could, if put in relation to each other, help to share an image of it. This line of reflection is helped by a series of illustrations of the various metaphors used to describe the platform, in a sort of visual ‘metaphorology’.

The second thematic area concerns the political economy of digital platforms. In particular, in developing this project, I was interested in tracing the relationship between platformization and the historical evolution of capitalist trends. Is there a *continuum* between the platform economy and older practices of extraction and capitalistic modes of exploitation, or are there discontinuities to be unpacked?³⁷ According to tech exceptionalists (corporate platforms included), recent technological innovations are really game-changers, as they reshape the economy and society in ways that are historically unprecedented. A Marxist analysis, however, would suggest that little of the platform’s tendencies toward monopolies and the abuse of market power is really new³⁸. The point is relevant: if we see a qualitative discontinuity with the forms of the past, this implies a shift in the very categories of politics and of the political; and it would, therefore, also require a shift in the very language we use.

This brings us to the third topic of discussion: the etymologies of recurring keywords in the platformization discourse. In order to reflect on what is old and what is new, one cannot but start by reflecting on how words and their meanings evolve or repropose themselves in changing contexts. This exercise places platformization within the Greek and Latin tradition that is at the origin of European culture, highlighting, once again, points of continuity and discontinuity with that tradition. Leaving aside any analytical ambition, I thought it could be a more suitable heuristic to identify – through a pattern-recognition methodology – a number of recurrent ‘keywords’ used in the discourse on platformization. It is a thematic classification.³⁹

There may be something folly about asking lawyers to engage in speculative exercises of legal imagination while discussing regulatory strategies with designers. And yet, for the time being – where alternatives seem to be foreclosed – it appeared to me as a legitimate option.

36 Prigogine and Stengers (2017) *Order Out of Chaos: Man’s New Dialogue with Nature*.

37 As famously developed by Srnicek (2016) *Platform Capitalism*; but see also the analysis of Boyer (2021) *Platform Capitalism: a Socio-Economic Analysis*.

38 It is the case of monopolies in the agricultural sector, the pharmaceutical sector, and many other industries. See the lucid analysis of Doctorow (2020) *How to Destroy Surveillance Capitalism*.

39 In the sense of Melandri (1969) *Per una filosofia della metafora*, 157.

I have chosen to work on the etymologies of the following keywords:

- Public;⁴⁰
- Map;⁴¹
- Infrastructure;⁴²
- Cybernetics;⁴³
- Responsibility;⁴⁴
- Institution.⁴⁵

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- 40 The etymology of the word *public* retains a double meaning, as both the opposite of *private* (it is the case of the traditional distinction of *ius publicum* and *ius privatum*) and of *secret* (and in this sense public means "manifest," "plain," or "visible"). Democracy theorist Norberto Bobbio even gave a definition of democracy in relation to visibility as "the rule of public government in public". See Bobbio (1982) *Democracy and Invisible Government*.
- 41 The word map comes from the Latin *mappa mundi*, literally 'sheet of the world', from Latin *mappa* 'sheet, napkin' and *mundi* 'of the world' (genitive of *mundus*). This keyword is a direct reference to Alfred Korzybski's famous sentence – restated by many others, from Gregory Bateson to Nassim Taleb and Houellebecq – that "a map is not the territory it represents, but, if correct, it has a similar structure to the territory, which accounts for its usefulness". Even when McLuhan stated that "the medium is the message" (a sentence invented as a joke while descending from a plane) he was pointing at something similar. This warning is particularly relevant today when platformization seems to be making it increasingly difficult to distinguish between maps and territories, between models and reality itself. With Baudrillard, we could actually say that hyperreality is characterized by the fact that the map precedes the territory and engenders it.
- 42 Infrastructure is composed by the word *infra* – meaning below, beneath – and comes from the Latin *structura*, and especially from *structus*, the past participle of the verb *struere*, which means 'to pile, place together, heap up; build, assemble, arrange, make by joining together'. If we read this with an eye on platform conceptualization, this etymology resonates with two key topics of the platform discourse: first, the idea of the platform being stacked in a multi-layered and piled processual structure; second, the idea, equally present in the discourse, that this 'structure that stays below' allows other things to stay on top of it. As Larkin (2013) *The Politics and Poetics of Infrastructure*, 329, has put it, infrastructure "creates the ground on which other objects operate".
- 43 The history of the term is interesting: it comes from the Greek κυβερνάω (*kybernáo*), which means 'to steer, navigate or govern'. It was the French physicist and mathematician André-Marie Ampère to first use the term *cybernétique* in an essay in 1834 to refer to the art of government in general. Without knowing it, Norbert Weiner also took inspiration from this word in coining the field of cybernetics as "control and communication in the animal and the machine". However, it was only with cybernetician Stafford Beer that cybernetics was applied to management and became "the science of effective organization" – a direct precursor of platforms' ecosystemic strategies. Even Foucault (2005) *The hermeneutics of the subject*, 235, refers to it in discussing the image of government as the act of piloting a vessel, and points out that the three areas of curing, leading others, and governing oneself are bounded together.
- 44 The etymology of the word *responsibility* points at two different concepts. On one side, *respondeo*: to hold someone accountable for their actions; on the other side, *res-pondus*: the 'weight of things', could be connected to the paradigm of care, something that feminist economics has been investigating for a long time. While the first prohibits (for instance, "do not pollute") the second enhances ("take care of the environment in which you operate").
- 45 Institution comes from *instituere* (to stay, to remain beyond those who manage it). This stillness is something shared with the idea of the 'state': something that does not change or that does it slowly. Hobbes himself thought of the Leviathan as a necessary monster that brings order and stability to the

Based on the area of expertise of the interviewees, the interviews are divided into three categories: political economy (platform governance, platform labor, platform urbanism, social movement and platformization, critical data studies, and trust infrastructures); design and software (which includes platformization and software studies, network theory and public values in civic platforms) and law and regulation (dealing with policy by infrastructure, the rise of platform regulation in the European Union and the relationship between the law and the platform organizational form).

The attentive reader will note that during the interviews I switch from two different (and alternative) epistemologies. One is the more traditional moral account, which I grew increasingly skeptical of⁴⁶. This part considers the importance of collective sociotechnical imaginaries, particularly regarding their performative character (if enough people believe in them, they become real) - with the awareness that a lack of imagination may *per se* be a valuable symptom. This is also in line with the classical cybernetic myth of internet research, anchored in the future: trying to imagine the “shared yet vague imagination of the future, not too close and not too distant”, in a “golden range [that] seems to be about twenty years forward, close enough to extrapolate from the past, yet distant enough to dare brave new ideas of the future”.⁴⁷ The latent question is whether we can imagine a *futurable*, different, and ultimately better kind of platformization. This kind of exercise, more than merely detecting *viable* solutions for our problems, allows for showing the immanence of the present by providing some distance from it.

On the other hand, social system research has shown how moral accounts may fall short in grasping the ‘complexity’⁴⁸ of contemporary society that platformization contributes at increasing. Hence, the second epistemology is grounded on radical constructivism for which society is composed only of communication, and nothing but communication. According to such a theory, the increase in the complexity of the functionally differentiated society needs a higher degree of abstraction to make society itself understandable. The first characteristic

formless state of nature otherwise leading to the civil war. The Leviathan is in fact written right after the peace of Westphalia, which is the beginning of the political modern order.

46 “Moral communication has to be reduced to a distinction between something good or something bad. In contemporary societies, this operation has become increasingly difficult from the point of view of the individual. When is it appropriate to make such a distinction? My point is that, in modern society, it is increasingly rare that situations are really promoted, developed or can be handled if you moralize. That means we have to extract a lot of questions and many distinctions out of the thematic field of morale. That is related to the structure of modern society, with its complexity, with the variety of guiding distinctions in business, in law, in politics, in religion, in sports, healthcare and so on”. Luhmann, *Beobachter im Krähenest*.

47 Rid (2016) *Rise of the Machines*, Introduction, XV.

48 I borrow an analytical understanding of complexity from the work of Niklas Luhmann as a “specific condition of a collection of interconnected elements” in which the elements cannot be connected to one another at the same time. Complexity thus means that a selection is necessary to create relations between the elements. In other terms, complexity describes the fact that in the world there are more possibilities than can be actualized, and thus “structures” are needed to reduce the complexity of the environment by pre-selecting its variety. For a detailed explanation see Luhmann, *Theory of Society* (2012) Chapter 1.9; otherwise Baraldi et al (2021) *Unlocking Luhmann*, 49.

of this cybernetic methodology is considering circular, autologic⁴⁹ ways of thinking as valuable forms of knowledge, complementary to deductive methods.⁵⁰ A second characteristic is an emphasis on notions such as the system's "reduction of complexity" of the environment in terms of time-saving for human psychic systems.

In the final essay, we will go back to the semantics and political relevance of the word platform in academic and public discourse. Taking the metaphorical proposal seriously, in an attempt to think infrastructurally, I discuss the same point using four different layers⁵¹. The platform's form will thus be discussed through:

Layer 1: definitions and categories;

Layer 2: a genealogy that considers together its corporate and cybernetic branches, in a comparison of the main available historical attempts where computers have been used to develop a cybernetic system of mediation: Toyota, the Soviet Union, Chile and contemporary global financial platform corporations;

Layer 3: a metaphorology of digital platforms;

Layer 4: a speculative exercise of imagination on the platformization of political organization.

In seeking feedbacks in the social world, we will therefore encounter several different kinds of circles⁵²: in metaphors, in hermeneutics⁵³, in economic processes, in definitions, and in the operations of digital platforms.

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- 49 By autologic, Luhmann means a distinction that implies itself. For instance, the distinction between form and medium is itself a form. According to him, for theories taking a universalistic approach, "autologies of this sort are unavoidable, and if we come across them, this is no objection: on the contrary, it is evidence for the theoretical standing of the conceptuality". For instance, theories such as the information society and the risk society are autological. See Luhmann (2012a) *Theory of society*, Vol. 1, 118.
- 50 This methodology is based on Luhmann's idea of cybernetics as a scientific methodology. As Plato did, Luhmann "highlights the existence of two main forms: deductive and cybernetic methods. The first is described with the help of the climber's metaphor, which depends, at each step, on an initial position (axioms, empirical data, etc.)". Cybernetic methods, in turn, operate in the opposite way: "as there are no such security positions (because there is no external validity) and since that security is only achieved in the process, this means that one has to be constantly reviewing the starting positions and all steps (even from the first position). These latter methods would operate in a circular manner." One should also acknowledge that this form is closer to art. See Ferreira da Fonseca; Leme de Barros; *Empirical research in law: new horizons based on systems theory*, 182. For a philosophical account of the value of analogies and circular thinking see Melandri (2004) *La linea e il circolo*.
- 51 Those layers can be one thousand, as in Deleuze & Guattari's terms; just three or four, as in the process of de-codification of an internet meme.
- 52 *The Circle* also was the title of Dave Eggers' novel, which pointed at a future of quantified self and extreme data collection.
- 53 The hermeneutic circle is one of the great concepts of the philosophy of Heidegger and Gadamer. See in particular Gadamer (1975) *Truth and Method*, Chapter 4, *Elements for a theory of hermeneutic experience*, that understand it as an iterative process.

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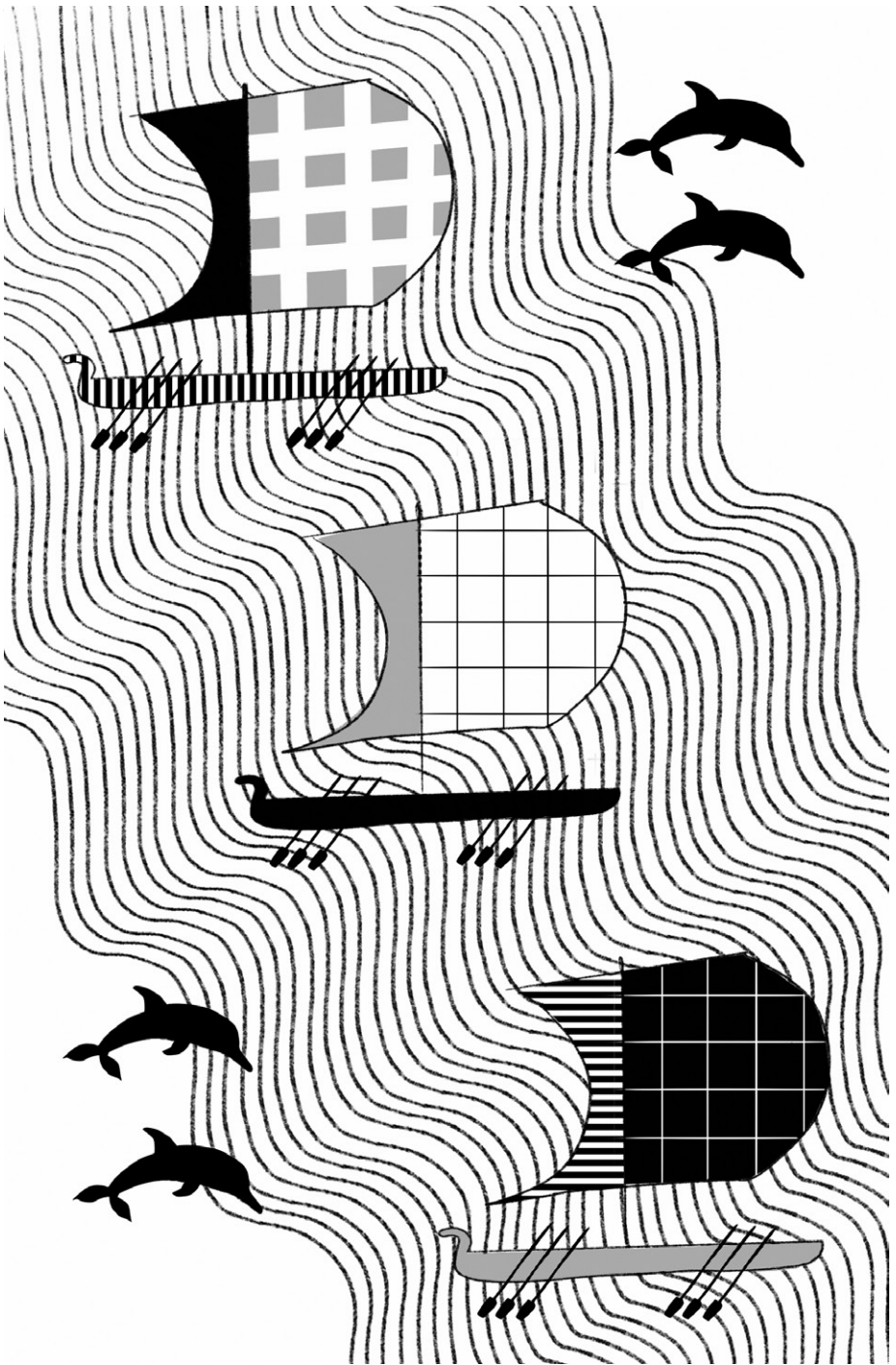


Fig. 1: Platform as Theseus's ship

GOVERNING PLATFORM GOVERNANCE

INTERVIEW WITH THOMAS POELL

Thomas Poell is professor of Data, Culture & Institutions at the department of media studies, University of Amsterdam. He is one of the leading European researchers on platformization and the author of many contributions on new media and platform conceptualization. The following interview is placed at the beginning, as it focuses on platformization itself rather than on how platformization has impacted other research fields. It should therefore stand as an introduction to platformization. As for other Amsterdam researchers, I immediately appreciated Poell's open-mindedness, and his will to bring people with different backgrounds together to create what Ivan Illich would call "tools for conviviality". The first part of the interview took place in Poell's room at the department of media studies; the second part was carried out online.

Nowadays, both in public discourse and in various academic fields, different definitions of platform can be found. Which one would you give?

Not only many scholars have defined platforms, but there are also corporate efforts to define and claim the platform label. Together with José van Dijck and David Nieborg, I have built on a variety of scholarly traditions to develop a comprehensive, but also critical definition of platforms. First, we build on research being done in business studies, which is not a common tradition to draw on in media studies.

Which scholars were you inspired by? Jean Tirole and Annabelle Gawer?

Exactly, we went back to early French and American platform business scholars. In their work the fundamental idea about how platforms operate as markets is articulated. In general, the platform company is focused on getting the different sides of a market on board: end-users and complementors, such as content and service providers, advertisers, and data intermediaries. In our work we have especially looked more in detail at the complementor-platform relationship, which is often dependent and asymmetrical.

The first tradition, therefore, understands platforms as multi-sided markets. However, one of the problems of that research tradition is that it is primarily focused on platform management and on the company that operates the platform. It doesn't ask fundamental critical questions about what it means to either produce for the platform as a complementor or what it means to be an end-user.

Reading that literature I felt that the good part was their very practical and operational angle. However, their perspective is very narrow, focused on how to develop better strategies to ensnare users and lock them in.

Yes, and without actually considering the consequences of these interventions. Hence, we also drew from a tradition that is very central to media studies: political economy. In our field, we have a lot of great political economists, who have asked fundamental questions about

labor, exploitative relationships, and the particular socio-economic configurations constituted by platforms. Hence, we wanted to connect political economy to business studies, as these traditions have a lot to offer to each other, but are rarely in conversation. Political economists and business scholars don't cite each other, don't publish in the same journals, and don't go to the same conferences. Yet, business studies provides crucial insights in the workings of platform markets, while political economy adds a critical angle to what we are witnessing in these markets in terms of concentration and monopolization.

The third relevant tradition, born within media studies, is software studies. Friedrich Kittler, Lev Manovich, Matthew Fuller, Ian Bogost, Nick Montfort and more recently Anne Helmond and Bernhard Rieder are among the founders of this field – developing core concepts in dialogue with computer science. They brought a more materialist understanding of platforms. Software studies initially focused on game consoles as platforms, but, subsequently, also considered social media, search engines, app stores, and photo and video sharing services as platforms - understanding them as complex data or computational infrastructures.

In our work, we have brought these three traditions together. This has led us to define platforms as data infrastructures that facilitate, aggregate, monetize, and govern interactions between end-users and content and service providers. This definition enables systematic research into the three types of relations at the core of platforms: infrastructural, economic, and governmental relations. Thus, this is an institutional perspective on platforms, but it also facilitates inquiries into how a wide variety of actors strategically position themselves in relation to platforms. Concerning the latter, from the perspective of the various stakeholders, the notion of the platform, as Tarleton Gillespie has pointed out, is very much a metaphor, continuously adapted depending on the kind of relationship that is at stake.

Or a 'platformative' operation, as Lamarre has called it. What metaphor would you use to visualize the platform?

The "stack" is a good one, I think. But my engagement with the work of Benjamin Bratton has not been very intense. I liked his idea that we are dealing with planetary computational infrastructures, which require a planetary response.

Geodesign?

With that, I am fully on board. More generally I would say that the notion of the stack works because what we see is constantly a stacking of markets, markets within markets. Think about the Apple App Store: it is a market where developers offer their apps to end-users. Yet, among these "developers" are also other platform companies, like Meta/Facebook, which offer their platform instances through the app store. Those instances are effectively markets as well. Therefore you have markets nested in markets. You can apply the same logic to the way infrastructures work. That's obviously where this idea of the stack comes from. Infrastructural layers are stacked onto each other. Alexander Galloway already observed this early on. Although the notion of the stack is powerful, I do think that the concept of the platform is very important to work with, as so many actors have invested in the term and it

has become such an important part of everyday language. Consequently, we need to engage with the concept, appropriating it for critical research and public debate.

What I like about the notion of platformization is that you put the concept of platform in motion. In a sense, there is no ontology of platforms: it is a processual movement. But some contributions still depict platforms as entities that can read your mind. Behind this, I believe, there is the idea of teleology; but if platforms have done something, it is precisely destroying that idea in practice. It's trial and error, right?

It is trial and error. In the public imagination it seems that there are only two sides to this: either platforms are empowering and emancipatory or exploitative and manipulative. I don't like either point of view. We need to get to a more precise understanding of the ways in which platforms operate as markets, infrastructures, and governance frameworks. And indeed, as you said, platforms are constantly in motion, constantly experimenting with business models, data infrastructures, and algorithmic systems. In that regard, I think it is important not to see them as omnipotent and evil, but rather get a precise understanding of how they operate as companies in particular markets. It is also vital to understand that these companies are not isolated actors: they are competing in larger markets, rely on public infrastructures, and are subject to public regulation.

I understand platformization as a category of politics. In that regard Eastern platformization - China, Korea and Japan - can be even more interesting than the Western one. In India you see platformization permeating a very different society from our own, with informal economies, and platforms make the informal formal. Do they operate in different forms according to different contexts?

This mechanism of formalization is very interesting. Informal practices, like everyday forms of creative expression or helping your neighbors, are now formalized through platforms. It happens in China as well. This is something we try to highlight in our book *Platforms and Cultural Production*: avoid taking the Western experience as the standard, and instead examine the correspondences and differences in trajectories of platformization around the globe. This requires specific analysis, which ideally needs to feedback into theory building more generally.

Another thing I have noticed is how biological metaphors are widely used in the platformization discourse. In biological terms, we may speak of the system's autopoiesis, the self-reproduction of a system's organizational relationships. But assemblage theory is also being used to counter the idea of an organicist seamless totality. What do you think about these metaphors?

I see what you mean. On the one hand, I think it is very important to start understanding how these platforms simultaneously operate in and generate ecosystems. Consequently, platforms can only be understood from the ecosystem perspective, because they are relatively open markets and infrastructures that involve a wide variety of actors. At the same time, we need to be careful with biological metaphors, understanding companies from a teleological perspective as organisms. Platform companies, like other institutional actors,

develop reflexively and strategically in relation to other actors. We need to gain insight in their strategic objectives and in the rationalities they employ.

Moving to a more personal question, how did you start researching platforms, and what still motivates you?

I think for many of us, it's two things at the same time. On the one hand, for many people in the field of new media, there is the fascination with technology. I actually got into the field early on—around 2004—as a lecturer. I was doing a Ph.D. in history, and before that, I studied political science. During my PhD, I began teaching media studies in Utrecht, initially focusing on the notion of the public sphere, which was mobilized to understand the internet. I was inspired by critiques on this interpretation of the internet by scholars such as Jodi Dean, Noortje Marres, and Richard Rogers. At the time, I was among others teaching a large first-year course on the history and theory of new media. Yet, every year I had to completely redesign the course, as every year a new platform emerged, Facebook, Twitter, YouTube, and so on. So I developed this fascination with emerging platforms and rapidly developing technologies.

On the other hand, I have also always been interested in political economy, trying to understand the really problematic side of platform companies. These companies were rapidly aggregating lots of users. Along with other scholars, I was interested in trying to figure out what the platform business model would be. And once we began to understand the economics of platforms, there were huge political-economic stakes on the table. As platform companies were developing into mega-corporations, it became vital to articulate a systematic critique and highlight the societal and economic consequences of platformization.

Has the study of platforms changed over the last decade?

Of course, very strongly so. There have always been critical voices — Jodi Dean, Lisa Nakamura, Wendy Chun, Geert Lovink — their work was there in the early 2000s. Yet, the dominant discourse was one of euphoria, buying into the Californian ideology, the infinitely growing economy. The idea was that internet companies would overcome many of the problems of capitalism and would bring prosperity and emancipation to all. This discourse remained dominant until about 2012-2013 or so. This is when mainstream academia became more critical of platforms. Public discourse especially changed after the US presidential elections of 2016, transforming from optimistic to highly critical.

Do you think platformization is going to last?

I think the platform model - multi-sided markets, relatively open data infrastructures, and governance through these markets and infrastructures - will certainly last and will develop further. However, it is possible to resist platformization. For instance, I have looked a lot at the news industry. While the overall industry has increasingly become platform-dependent, some news organizations are moving towards sustainable online business models, which do not revolve around platforms. Particularly, the major news brands, *The New York Times*, *The Guardian*, *De Volkskrant*, have succeeded in generating substantial income through

subscriptions, donations, and advertising. In many sectors, strong economic actors have the option to remain largely independent from platforms. Of course, this also means that small economic actors do not have this option.

What is your futable imaginary of platformization?

I don't have an ideal scenario in mind, like 'oh, we can solve all things through platforms'. I see powerful companies intervening in every sphere of life. My hopes or ideals for the future are mostly about regulation. I think that companies are not going to regulate themselves because they are businesses and they will try to maximize their profits. Public authorities – both national and European – need to set limits to a series of problems: what kind of business practices are allowed, data collected, and targeted services developed. In that regard, I think there is a strong need to move away from neoliberal governance and develop a more interventionist approach to the platform economy. Moreover, it is also vital that public institutions gain democratically regulated access to platform data. For example, if you look at social media platforms, we need to be able to trace how public opinion evolves and how it affects democratic processes. Why don't have universities, for example, have access to anonymized Facebook data?

I do have faith in regulation, but the intersection between legal and geopolitical issues that such a process would entail leads to a dilemma. Building on the work of legal-political theorists such as Carl Schmitt we could maybe say that this moment is nomic: it is coupled with a political act of appropriation of territory. It has been defined as 'platform sovereignty' as opposed to state sovereignty. There must be some conditions for a regulation to be effective, right?

I don't think there is an easy way forward. Platform companies as planetary actors escape national and regional legal frameworks. This makes regulation complicated. At the same time, I do think that particular entities like the EU or the US government can set standards that, subsequently, become standards for other parts of the world as well. This type of standard-setting, in a legal sense, is very powerful. It does require a particular political commitment that has been missing in the past.

You mentioned regulation as a way forward. Do you have other ideas?

It depends on where you look. I do think that it is important for public institutions to develop platform alternatives in specific sectors. Sectors that really matter. Education, for example, is something we have written about in *The Platform Society*. In other fields such as health and news, where we think it is core to support the realization of public values, it is vital to develop publicly funded and publicly governed platforms. Online identification would be another field, which is currently dominated by commercial platforms, such as Facebook and Google.

A colleague from Utrecht, Jeroen Bosman, has made an overview of the key services available for core functions in academia, such as publishing, online learning environments, identification, information management, and so on. For any of these functions, there are public alternatives available. The discussion about free and open-source software alternatives

has been ongoing for decades; it is not the first time we talk about these things. Many of the alternatives for commercial services are, however, not sufficiently supported, so they cannot be offered at scale. Currently, we are using Zoom when we offer an online seminar, but there are good alternatives. However, these need stronger infrastructural support. That's one investment that, as a public sector, we need to be prepared to make. Publicly supported services can be used by a range of public institutions, including universities, municipalities, and healthcare institutions.

Yet, platform regulation is never unambiguous. The moment you say that companies should have full authority over what is and isn't shared on platforms, you make corporate interests the guiding principle of how public online communication is governed. Alternatively, if you vest that power in the state, political interest will become the guiding principle. Is this an authoritarian state that uses its access or its power over platforms to surveil its population, as the Chinese state is doing? Neither do you want liberal democratic states to make fundamental decisions about what can and cannot be shared on platforms like Facebook. Ideally, public regulation entails states establishing a framework in which a variety of stakeholders have a say in how platforms are governed. These stakeholders would obviously include the platform company and public authorities, but also citizen representatives and relevant NGOs.

Thinking about platform governance, it is key to not only focus on the players, but also on the larger game. Platforms have developed in a neoliberal environment. That's ultimately the problem. Platforms are intensifying the neoliberal politics of shifting responsibility to the individual and of making the market the central institution of society, a development that precedes the rise of platforms. In that regard, it is important to understand the larger political-economic context in which platforms are situated. This means that you should not just regulate platforms, but develop a new approach to organizing society.

What do you think is the role of digital platforms in relation to maps and territories they create and recreate for our everyday life?

I am thinking about maps and territories in correspondence with the capitalist system and capitalist relations, so the same applies here. In terms of mapping, I am thinking along the lines of Fredric Jameson. It is the question of the impossibility of cognitively mapping the global capitalist system. Being positioned somewhere in this system entails being unable to comprehend or represent the whole. It is impossible to experience or understand the consequences of the system in other parts of this system. This also applies to the platform ecosystem as a computational global infrastructure. Hence, platforms raise the problem of mapping. The platform ecosystem constitutes a highly dynamic set of relations, constantly subject to shifts and transitions. Consequently, a wide variety of actors must continuously reposition themselves.

Switching to the etymologies, the word public can be understood as the opposite of private, but also of secret. Some scholars are suggesting that the algorithmic black box should be opened, while others are saying it would be pointless. Which side are you on?

There is a popular demand to gain insights into algorithms and their secret recipe. I think this is impossible for a number of reasons. Indeed, these systems consist of many variables, making them highly complex, but that's only part of the reason. The other reason is that these systems are constantly evolving, increasingly involving machine learning, which makes it hard even for those who designed the system to understand how it is evolving. And even if you would have immediate insight into the algorithm, you still wouldn't be able to predict what kinds of results the system would produce. It always works in combination with a constantly changing dataset, as people are always doing new things. Hence, we are looking at a combination of continuously changing algorithms and shifting data streams.

Thus, I don't think we can simply open the black box, given the right access. What I do think is possible is public oversight over how algorithmic systems are being developed in terms of underlying principles. I think there should be an ongoing conversation about these principles between platform companies, public regulators, citizens representatives, and other key stakeholders. In other words, the design of key algorithmic systems should be opened up to public deliberation and negotiation. To prepare the conceptual ground for such deliberations and negotiations, I have written an article with Natali Helberger and Jo Pierson on the notion of cooperative responsibility. We argue that we need to move from a situation in which platform companies are solely responsible for the communication and exchanges on their platforms to one in which this responsibility is being shared. A situation in which various stakeholders are empowered to share responsibility.

That connects to the etymology of responsibility as accountability as well as care. Can platforms be drivers of a positive change in the environments they operate in?

I think there are a couple of things folded into one in this question. It remains important to underline that virtually all leading platforms are run by corporations, which are trying to maximize their profits. In that sense, I don't think we can expect platforms to act in the interest of the public good. Platforms are entangled in the capitalist game. The second thing to highlight is that major platforms are also becoming semi-public infrastructures, intervening in many spheres of life in a way similar to public infrastructures. Platforms become almost unavoidable in key sectors of the economy. The moment this happens – when the platform becomes an infrastructure – is also the moment the platform needs to be put under public oversight. At this moment, the platform becomes a public matter. If they are turned into semi-public infrastructures under strict public oversight, platform services can act as platforms of care.

So we can build a platform for purposes other than extraction and profiling?

For sure. In principle this is possible. However, whenever there is a business opportunity a commercial player tends to intervene. Earlier I spoke of academia and Big Tech. Here we can see big tech companies and venture capital aggressively developing services. Consequently, it is very difficult to develop viable public alternatives. This is the reason why we are all on Zoom and Teams. There are public alternatives, but without sufficient financial and technological backing, these do not deliver comparable performance at scale. For public alternatives to

become viable, we need strong public action and support. This means a shift away from the market as the central institution in all spheres of life.

I personally value the relationship between cybernetics and platformization. If you bring it to regulation, one idea is that legal principles should guide the design of sociotechnical systems. Is this by design regulation feasible in the case of platform architectures?

It is absolutely necessary. Speaking of cybernetics, I do think that it is relevant. You can see a revival in terms of thinking about cybernetics, building on 1960s and '70s theories. The discourse on cybernetics has gained urgency because of datafication. Governance by platforms very much revolves around datafied feedback loops.

More generally, in our last book *Platforms and Cultural Production* we proposed among others to consider governance *by* platforms not just in terms of moderation and algorithmic curation, but also in terms of regulation. Regulation means that the platform sets infrastructural standards so that external actors can connect to it. Platforms do this in a variety of modalities you can call 'boundary resources', which platforms provide to third parties to allow them to work through the platform. Such boundary resources are, for example, Application Program Interfaces (APIs), Software Development Kits (SDKs), but also developer terms. All these standards-setting resources enable others to build on the platform, but they also regulate how others do so. Of course, governance also takes shape through curation, the way the platform algorithmically or editorially makes things visible or largely invisible. Also important are moderation practices through which the platform either before or after publication removes or blocks things.

Concerning the other side of the equation, regulating platforms by public authorities – the governance *of* platforms – I think it is necessary to have regulation at the level of infrastructure. To affect how platforms shape social interactions, we need to intervene at the level at which the platform regulates by setting standards. What kinds of access does it give to user data and how does this allow third parties to target end-users? And what specific forms of programmability does it offer and what does this mean in terms of the particular services that can be developed on top of the platform?

This reminds me of the Chilean case of Cybersyn as a historical example of a central authority trying to explicitly embed certain socialist and democratic values in the digital infrastructure. What do you think about it?

I think it was an interesting project, but it seems to me that whatever system you develop, there are going to be choices about the way it is designed. These choices have consequences for the type of data you can collect, how this data is processed, and acted upon. The crucial question is where the authority or responsibility for the design of these systems lies. In the current situation, the design of complex technical systems is almost completely left to the market, which means that control over the organization of society is also moving to the market.

You can of course organize this differently, and that is the Chilean proposal. But if it is ultimately the state that designs, operates, and controls key public infrastructures, without public oversight, you are in a situation of authoritarianism. I would say, it is crucial to build democratic control in the design of technical systems. That's precisely why we proposed the notion of cooperative responsibility to inject democracy into the organization of large technical systems.

To what extent do you think platformization is a constitutional issue? Do we need a right to have rights inside the platform? A platform's checks and balances?

We need effective regulatory frameworks. Currently, the effectiveness of the regulation of platforms is debatable because platform infrastructures are constantly evolving and regulators have little insight in and control over how this happens. Moreover, there is also the question of geographies. Platforms are always already elsewhere. We need a form of governance that is responsive to act and enforce rights at the level where it needs to be enforced. In the case of Airbnb, for example, it is feasible to do so at the level of cities, as we have done in Amsterdam, in Barcelona and in Berlin. For other types of platforms— like social media— it is much more difficult to see where regulation needs to take place. But to end with an optimistic note, Europe is really engaged, taking its role as platform regulator seriously. In this regard, I'm hopeful for the years to come.

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Fig. 2: Platform as Vampire

THE POLITICAL ECONOMY OF DEMOCRATIC PLATFORMIZATION

INTERVIEW WITH NIELS VAN DOORN

*Niels van Doorn is an Assistant Professor of New Media and Digital Culture at the Department of Media Studies, University of Amsterdam. As a researcher, he belongs to the tradition of political economy and urban studies. Niels conducted highly original research in his project **Platform Labor**, where he interviewed many gig workers in order to understand how people sustain themselves and each other in precarious circumstances and how the notion of value emerges at the intersection of political and moral economies. I find his ethnographic and self-ethnographic focus - for his research, Niels actually worked as a delivery rider - particularly interesting. Researching platforms is not a detached and objective activity, but it means researching the worlds we inhabit; hence, every platform researcher has to deal with this personal dimension. During the interview, we discuss how platforms are entangled in the capitalist, hyper-financialized economy, and some of the limitations of regulatory approaches that want to 'democratize' platformization. As Niels explains, without extreme data collection those services wouldn't work as smoothly as we are now used to. The interview took place online in December 2021.*

Could you provide a definition of the platform? What metaphor would you use to describe it?

Definition and metaphor...that is, I suppose, how you position yourself. There are so many definitions. Platforms can be like credit cards, or like malls, which I think is quite a good metaphor. But considering that I work in new media, I think I would define it as a computational or software-based architecture that creates a space where third parties can interact and usually transact. This results in the creation of a particular form of value for the interacting parties, as well as some value extraction by the platform itself. The latter is fundamentally based on facilitating but also governing and extracting rent from that. Those would be other metaphors: governor or rent seeker.

So many metaphors have been used. My favorite one would be the shapeshifter. Because computational architectures are very agile, they transform. Let's take Uber or Airbnb: they function a bit differently in different jurisdictions and nations. In some sense they are heterogenous: one easy example is that Uber allows for cash transactions in different African cities. They always adjust themselves and they are malleable to social, cultural, political and regulatory conditions. When they roll out in a new city - which is usually a very fast roll-out - they think about this a lot, they have to switch forms a lot.

The market-maker is a more obvious one, but what I ultimately think is interesting about platforms in our research group is actually the notion of platformization, as a verb and process. We analyze what platforms actually do and how they strategize and act and develop in a local

place, and doing so shows that there are always some failures, ambivalences, some give and take. And that's another metaphor; the *quid pro quo*. They give you something, whether you are a user, or a community, or a government, they fill a particular institutional void or a particular gap or need, but they take something as well.

The metaphor of the shapeshifter is very interesting. I am also interested in what you said about platforms adapting to their environment: haven't companies always been adapting to the market, to their environments? They have been governing employees on the inside and the institutional arrangements outside of the company. Where can we place the emergence of something new? For instance, Bratton sees a novelty in the form of centralization and decentralization at the same time. There is the distribution of interfaces, an infrastructure to follow the user's interaction, and with that, you can always pre-adapt and see exaptation taking place.

You basically just said it. I do think that's the core. One step before that, I see that being said a lot: previous companies have also done this, and they are also regulatory entrepreneurs. They are lobbying, and astroturfing is not a new thing in that sense as well, right? But users are not consumers. What Airbnb has done with its hosting community, initiating these so-called "home-sharing clubs", is not like Philip Morris or other types of companies that also need to engage in regulatory entrepreneurship.

Beyond consumers and users - prosumers or whatever you want to call them - these are people whose livelihoods are often tied to these companies, in ways you didn't see with previous firms. Why? Because platforms are market makers, and they govern these markets where people come together as buyers and sellers of goods or services, what I just described earlier. That already creates a whole different kind of situation, in which people are much more likely to roll up their sleeves in defense, because even though things suck on the platform, they are becoming more reluctant about missing that economic opportunity.

While Uber drivers and Airbnb hosts are often anti-Uber and anti-Airbnb, if they would really be regulated and their income is affected, they become advocates too. And then of course what really matters is the fact that platforms create these markets. Former companies didn't create markets, they created a market for their products, not a multi-sided market, so to speak. That is where my point would connect to what you have already said: they would start deriving data from it. And they could use this data not only to reduce transaction costs (for some users), introduce new features and make them more efficient for people; they would also derive value from it as a company; they could create new product markets, new types of services, and use that data as leverage to potential regulators. These are practices and developments that are not even comparable to what came before. They are all really new.

Let's talk about your fieldwork. Did you ask some questions about riders' self-perception on the platform? What do they think a platform is?

This is a very hard question to answer in an unequivocal way. I have talked with so many people - about 150 interviews in three different countries and cities. First of all, we should

establish that gig workers are not one type or one single person. That makes it hard to say: what does the gig worker think of the platform? There's no singular gig worker, nor is there a singular platform. But overall, if you twisted my arm and made me generalize, what I have seen most of the times across three cities in the interviews, is that they see the platform as this boss at a distance, but they do realize that they are being exploited. As they often say, this is not a fair partnership or anything, so they see through the marketing literature. They also see the platform as an application that gives them the opportunity to make money in a situation where they hardly have any other opportunity.

That is especially true for migrants, but also for other labor market outsiders. You either do that or some other minimum wage or informal job. So they approach platforms, and it is my central term, with ambivalence and ambiguity. Again, there is this quid pro quo relationship they have. Is it your boss? Not really. But are you an entrepreneur? No, of course not. So, what do you represent?

Whereas we make our living out of thinking about what these platforms are and do, people who use these platforms are agnostic to what they really are. They are more concerned about what they do. As long as it works, they think it's great, and they don't care where it comes from or what it does. But when it stops being great - when the wages go down or they are being deactivated - then they start to worry, then they want to start finding out. But other than that, just as the platforms use them, they use the platforms and they see it as an unequal relationship. But as many of them literally say: "Hey, what can you do?"

This is the problem of how to distinguish platforms from one another according to their properties. Beyond the political economy, I see legal protection by design as the idea that you can bring someone to court for the design choices they made. You are not allowed to build your digital infrastructure as you like; you need to do it according to some principles. How do you pre-regulate the affordances, or certain features, of the platform?

There are a couple of things here. First of all, I do not think you can pre-regulate affordances, because these only arise in the interaction between technology and the situated user. You can pre-regulate design; you can pre-regulate protocol. But isn't regulating always 'pre-'? Because you regulate something that doesn't belong to the future yet. So, what is pre-regulation vs regulation?

But in the West, the law comes after a technological introduction. There is a problem that arises; someone believes that is not good; and the legislator tries to change the law up until it becomes a judicial practice. But if written law can always be disobeyed, software architectures are another kind of normativity.

In that sense, you cannot pre-regulate design, or platforms, because they are shapeshifters. As we said before, with platforms there is always a workaround - that is essential to software engineering. You tool, you retool, there are workarounds, you hack. Regulation will always be reactive, unless the law becomes embedded into the technology, like the so-called "RegTech." But that would require a very different regulatory framework, at least partial expropriation

or super-heavy oversight by public officials, which is a huge responsibility in a way, because otherwise we cannot enforce it, and it would also mess with fundamental constitutional rights.

We have to decide if we want to pursue such a technocratic future, because that would be the ultimate essence of technocracy. What do we do if we want to make it more democratic or transparent? Then we should increase public oversight. Ok, let's say we increase public oversight. We have public officials at various levels of the government, oversight committees, all this infrastructure of regulation and governance in there. But the system we use, and this is more my overarching point, the systems work for us every day because we really don't have to think about what they do with all the data and how they work, and we kind of accept that, it's a disavowed trade-off and it is not something new.

My point is, if we really did this, with any type of change we would constantly have to organize a solution to any issue. If you did this really democratically, it would cost a lot of time, and our system would not function as smoothly as it does now. Our very convenience and efficiencies are predicated on our unfreedom. In order to get some kind of freedom and democracy back, we might have to give up some efficiency, some convenience, and rethink completely the political economy around that as well, and our own comfort levels.

To go back to the original question: be careful what you wish for. I am also very much in favor of public oversight, not on a nation-state level, because just as you cannot trust corporations you cannot trust the state. It has to be on a lower level of government, a more grassroots organizing of public oversight; but the thing is, if you do this properly, we won't have the same technological landscape at all.

Surely this is a good thing, but it would also be a very difficult thing because entire economies – from small businesses to financial systems – are completely dependent on it. And when I say financial systems, that brings it to the other and ultimate problem: it is not a national issue, it is transnational, and national governments are fully implicated. Some of these companies are *de facto* too big to fail. We have a serious issue, because public entities from the municipality level to the national level, including pension funds and other institutional investors, invest in these companies that exploit opaque and oppressive technologies. We, as a society, are fully captured.

Shall we look at China and rule Google illegal, then? In Europe, they gave many high fines to Google, but economically speaking it makes so much sense to break the law anyway.

The state in China is of course not separated from private corporations. Why can China do what it is doing? In Europe, we wouldn't have that kind of power. What we ultimately have to do is change the financial system and address how these investment ecosystems work. This would show how thoroughly embedded the logics of finance and financialization are, and how entwined the so-called public and private sectors are. Ultimately, I think a larger revolution is the only chance. Where do you start with that? That is where I am a pessimist realist. I don't see any way out now, but you have to continue thinking about it, although it is super hard given the current circumstances.

It's platform realism! To go back to the original question, if you detached yourself from the pessimist side, what would be your futable imaginary of platformization?

Or platform pessimism, which alliterates better! What I have proposed in that paper on migration and the gig economy, together with my colleagues Fabian Ferrari and Mark Graham, is that we need to address and tackle this more broadly, just as we discussed. We cannot talk about platforms only, we need to talk about the entire political economy, which is deeply financialized. Locally, we need to rethink why these companies are here. The simple answer is because low-wage labor markets in the service economy suck. Most of the times it is underregulated, there is a lot of informal work – and again, the informal economy is a response, it is an escape and an alternative.

The problems in these labor markets are allowed to fester and grow in a fairly uncontrolled way. There is regulation but it is not enforced, which is why the formal employment relation, with all its rights and responsibilities, doesn't really function there. It's all about subcontracted labor, often intermediated by shady companies. These conditions are drivers of the gig economy, together of course with finance capital.

Then there is the capital side of the problem, the issue of too much excess capital – at least until the recent interest rate hikes. Those things come together, and you create something like the gig economy worldwide. In the beginning, it was an opportunity because there was so much capital and they needed these markets to grow. It was actually 'manna from heaven'. It was great for everyone involved. You would have loved it too. But then of course you needed to reorganize because of ongoing competition and profitability issues, then things started to get worse by 2017, and that is why you see migrants working almost everywhere. Why is that?

These people would otherwise work in other sectors and they wouldn't be so visible. Considering all that, we have to ask ourselves: how can we reorganize and improve the labor market chances – and not just the working conditions and the wages – in these 'low wage sectors', usually service sectors but also some manufacturers – and how can we do that while also thinking about labor market policy and labor law intersecting with migration law? With more progressive and inclusive social policies?

Another example I often use regards all the workers from Pakistan, India, and Bangladesh employed in food delivery jobs. They are usually international students who could only work 16 hours a week if they were employees. That is just not enough. They need to work more because they have usually indebted themselves to come here and study. So there is a loophole. I keep repeating this example in all kinds of situations because it shows so well, so clearly, that we also need to see where we have created such loopholes that gave rise to these issues that we're now saying we should no longer tolerate.

That's the thing: we should no longer tolerate the gig economy, but we tolerate and we are still tolerating all kinds of other 'bullshit jobs'. Just because they are technically regulated by an employment contract does not mean you cannot subcontract to any type of shady intermediaries. That's what we need to address. Instead of being an "employer" of last resort

— or even, for some, first resort, because these people travel to another country to immediately start on a platform — if you raise the bar in total, the others will have to raise the bar as well, otherwise they won't be able to get workers anymore. Since they cannot automate this stuff yet, and won't have the means to do so for a while, they will need to do better, or their supply side is gone. Instead of focusing on platform culpability, focusing on the platform as a specific domain, look around you and see what it is embedded in, and then start thinking in a more holistic sense. We need to think about the (low-wage) labor market and its ties to finance and technological innovations.

How has platformization changed over the last decade? Do you think it will last?

What changed over time is the study of platforms, which is very fragmented. It's been a couple of years now, or five years max, that people have started bringing these streams of literature and perspectives together, and you have Poell and Van Dijk's text on platformization to synthesize all of this. That has changed, we have got a more holistic sense of what platforms are and do. We realized that platforms and platformization as a (disruptive) process are spreading to all kinds of other sectors, because platforms are — or like to present themselves as — something like a fix for society. They are means to expand — also in David Harvey's sense — they are means to expand frontiers of capital accumulation. That is also what my PhDs' projects are about. Volunteer platforms or social support platforms are also expanding, but in a thoroughly different way than the corporate model or the venture-backed finance model.

That leads to the second question. I think platformization will continue because companies, through the platform model, and through platformization processes, find different avenues to insert the platform business model into places where maybe they haven't been yet.

Fintech is an example of all kinds of platform lending, borrowing, and payment. Fintech companies have been working with public institutions for development purposes and financial inclusion. They use a primarily data-driven platform approach to these objectives. But think of Robin Hood and E-toro as well, social trading and brokerage platforms. Think of supply management and logistics that are being platformized. In a way, platforms are trying to reorganize or find their way into Web 3.0. What can platforms do with the blockchain? It's about recentralizing what is supposed to be decentralized.

In addition to that, all kinds of startups are experimenting with the platform model, and they usually end up being acquired by another, bigger platform company. In real estate, there is a variety of platforms and data-driven technologies to manage and generate more value. There is this article on "platform real estate" which frames it in a really useful way. So there are so many different ways in which platforms are used to extract value and turn things into an asset, they *assetize* labor, underutilized goods, users, then extract fees and commissions — and of course data. It is what capital does, it needs to expand and accumulate. This is what platforms and datafication allow them to do. At least for now. So yes, I believe we haven't seen the last of this for the upcoming couple of decades.

You mentioned volunteer platforms. We can go to the double etymology of responsibility, as accountability on one side and as care on the other. Can we design digital infrastructures that enable care practices?

You don't need platforms for that, the platform is not something necessary either way. A platform can take many different shapes, but it is not a necessary tool, it might be a useful tool, but it is all about the political will and the economic resources that we are willing to leverage and collectively utilize. My PhD student works with care platforms: in this case, you "see" that platform, it has an institutional face, a face in terms of social reproduction, where you marketize for those who can pay, easy and efficient care for children, house cleaning, care for others. But usually they reproduce the same issues of other gig economy platforms, in different ways. It is definitely not the same as food delivery at all, but there is quite some literature on that.

Emma Dowling has identified these platforms as being part of a larger "care fix". Care is another frontier, it is very closely connected to health data and the broader health industry, and the platformization of that could lead to a lot more capital accumulation in an area where tech companies are only beginning to exploit these possibilities. Wherever these processes of assetization and financialization are happening, platforms can be very efficient in amplifying them.

So that is the first thing I would think about, it is the other way around. We need a political platform, there is an "altruistic surplus" in our society, you see it because so many people volunteer, so many people are willing to give their time to others for free, as shown by my PhD student Eva Mos. There is this 'care surplus' that platforms then try to match with care needs and, of course, it serves society and caregivers on volunteering platforms.

But the question is: why do we need that? Because the government cares less and less and less, or invests less and less in care. We see this in the Netherlands: we live in a "participation society", as our king has declared back in 2014. We as neighbors and communities have to take care of our elders, or we pay a lot through the market. With Covid, we have seen that when one domino block falls, everything falls, and still our government says that in the long term it wants to save 5 million on care. There is something fundamentally wrong in a society that outsources its care responsibility to communities and families, and then uses platforms to make that (ostensibly) more efficient and easier. You are just window-dressing and you are putting a band aid on something that is bleeding, even hemorrhaging everywhere. We don't have the political will nor seemingly the political-economic capacity to change that, at the moment. Which is something that scares me.

This is so tangential to the core discussion, but the political-economic answer of the left is complicated and takes long, besides involving messages to people (politicians, policy makers) and companies that don't want to hear. It doesn't communicate well, while the right-wing message does. And in our current media ecology you see its effects, combined with misinformation, which is also not a new thing, to be sure. It's just amplified and reconfigured in new ways.

Here's another loop: disinformation is also spread by the design of actual platforms. They make money out of it.

The platform is an emergent institutional form; and it is radically reorganizing capital and labor flows, political economies; and it didn't work as a *deus ex machina* either, but it restructured existing conditions of possibility by accelerating and amplifying. The impossibility to determine what it could give rise to also generates something new, but because of the framework datafication and platformization operate within, it tends to accelerate and amplify rather than reroute, cancel and destroy itself. So we need to think about how to reclaim the means of circulation, of distribution rather than production per se. We need those means, the computational apparatus used to control and coordinate the logistics of labor and capital circulation (and/as accumulation).

Following the old concept of the Internet, legal scholar Rodotà once proposed to create a Habeas Data and an Internet Bill of Rights. However, in the current platformed internet ecosystem, you maybe lack something that Arendt called the right to have rights. Can the answer come from regulation?

The *habeas data* puts the horse before the cart, because what good is data to us if we don't have the computational infrastructure to process and analyze it with? So *Habeas Infrastructura*? *Habeas Platform*? The right to have rights is a nice philosophical precondition, but it has been criticized too (and rightfully so), for instance by Jacques Rancière, who basically said that it doesn't get us anywhere concretely. What does it really mean and how do you organize around it? It also relates to sovereignty very much: the one that grants the right to have rights can eventually take it back, and you can never get around that. Of course, the right to have rights is a fundamental premise, but it is also hard to enact, to give actual political form and substance to. You see that in humanitarianism, with respect to migrants and asylum-seekers. There is always the creation of the exception, of exceptional spaces and peoples.

We'd have to deal with a technological, protological constitution, and with a mode of functional sovereignty that trumps national sovereignty. The EU doesn't really have the teeth, being a transnational rather than a national institution. With its new directive on platform work, the EU cannot do much to change national labor law.

Then, if we want to write a European constitution into software infrastructure or platform architecture, which are *de facto* constitutions themselves, how would we do that without some forms of expropriation, some form of taking control? I am not saying that I don't want to explore where this road would take us, because I think there might be some potential benefits there, but right now I have some hesitation about what it means, and I think it can only work or be some partial success if we are willing to completely reorganize our social and economic practices that depend on this infrastructure, because they will have to change. The system we are used to is fundamentally based on opacity and automated dynamics. Because so much is automated, including ad servings and financial markets.

From a legal point of view, I also think there is a normative, even performative side of constitutional charts. But the point here is to create an enforceable right to sue a platform for the design choices it made.

They work if there is an enforcement infrastructure, right? The problem is that the constitution, like any type of law, is predicated on individual abstract legal persons. The world is not populated by abstract legal persons, there are so many gender and racial inequalities, and the law hasn't really served marginalized communities, to put it very mildly. The law also subordinates, it excludes, and has predatory forms of inclusion (just like platforms). So I think that you want to make a distinction between abstract constitutional legal persons and the right to have rights, on the one hand, and how things actually work in practice, on the other, because there we don't just have to deal with law but also with political economy. Ultimately, this notion of an embedded constitution is bound to fail unless you have people checking its operation constantly and recursively. That is so much work and it makes everything so slow. We'd need to slow everything down and that is of course the antithesis of a platform-driven society, which is premised on amplification and acceleration. So maybe slowing things down would be a way to counterbalance platform power. And maybe that's a good ending?

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Fig. 3: Platform as Leviathan

PLATFORM SKEPTICISM AND PRIVATE TRUST INFRASTRUCTURES

INTERVIEW WITH BALÁZS BODÓ

During my stay at the Institute for Information Law (IVIIR), I joined Balázs research group on trust and digital technologies and on the societal impact of blockchain technologies. Balázs's work initially dealt with piracy, commons, and access to libraries. Nowadays, as a raffinate social scientist working mainly with lawyers, Balázs provides the different angle of critical economic studies to the legal discussion. Balázs has a sticker on his laptop with the following sentence: "I disagree with what you say". This dialectical attitude is reflected in the interview, in which we discuss whether the platform is to be considered another 'empty signifier', a buzzword, or if it can be a useful category even for academics. This healthy skepticism is important, as it provides a counter to the platform-apologetic perspective. Furthermore, during the interview, we also discuss one of the crucial themes of the sociological tradition of the 20th century: trust and its production. The interview takes place in a bakery in Amsterdam, in front of a Dutch over-expensive sandwich.

How would you define the platform?

I will be honest with you, I hate the term platform. I try to avoid using it. I think this term has done more disservice to discourse, policy, and efforts to understand what is happening to us in a digitized environment than anything else. I think there is a political economy of terms, in academia or in the professional and popular discourse around digital technologies, which is dominated by the fact that academic fame and glory is coming from inventing some simple, bombastic term for highly complex phenomena, popularizing it, and moving on as soon as the problems become obsolete. Many academics are so much bound by the power of such discourse that they rarely ask whether such interventions are actually useful.

Is the platform metaphor hiding more than it is revealing?

It obfuscates the object of inquiry, because it labels very different things as similar. We speak about concrete firms with specific service portfolios; about concrete services; about business models; about the business models of third parties within those services. The term 'platform' conflates these very different social, economic, and cultural practices. If everything is seen through this lens of 'the platform', we are preventing ourselves from asking specific, concrete, relevant questions. It universalizes questions, which is a problem, because I don't think that the question raised by the business model of one particular digital service provided by one particular company is the same as the questions raised by the same business model in different jurisdictions, different cultures, and communities.

I do agree with that, but the question for me is: can we consider the digital 'platform' as a new organizational model? Poell and his colleagues have defined a platform as a reprogrammable data infrastructure¹, where you have a feedback loop between the digital infrastructure that allows collecting data and the reprogrammability of the infrastructure itself according to those data.

I think Poell's definition is very generic, which can be applied to a great extent, for example, to medieval marketplaces in letters of credit. You can see Braudel on that. It also rather vacuous, as it does not help us understand a bit, whether and how there's anything 'platform'-specific in how systems, organizations, institutions, social practices, and communities change. This definition is only saying that platforms adapt to their environment, but then we have said nothing new.

Exactly! But the thing is, how do they adapt? Platforms do not adapt as a firm, there was not the above-mentioned recursive feedback loop that makes a difference for me, and neither does the creation of the market in an enclosed space.

Throughout history, there were entities that acted as market-makers, where the supply and the demand of certain goods or services or commodities could meet, such as medieval cities or trade networks. Did they create two-sided markets? Oftentimes, they did. Did they adapt to changing circumstances? Yes. Did they adapt live? Yes. Were they global? In many cases, yes. Were they under the close control of some exclusive groups? Oftentimes, yes. Were they digital? No. So, maybe the big difference is the relevance of digitization? I don't know.

Let's take another example: transcontinental telegraphy. Is the telegraph a platform by the above definition, apart from it being manual? I'd argue that it fits into that definition quite firmly. On the one hand, it certainly shaped the ways parties could interact through the system. But also, its core organizing principle involved a constant self-reflection on the origins and destinations, volumes and speeds of the information it transmitted, which it collected and analyzed to shape its topography, the allocation of internal resources, and governance.

Ok, but you are now referring to what I call the "general definition" - the platform as a general space of interaction - which is too broad also in my opinion. Big data, real-time planetary-scale computation, those things are new...

Yes, that is true. Big words, but what do they mean? What is their relevance? What does having big data and planetary scale computation add to, or change to previous examples of 'platforms', reconfigurable spaces of exchange and interaction? To give you an example: I think the Amsterdam stock exchange was a global platform in the 17th century. But then, the question becomes the following: how it is different from the platforms of today? Maybe it is not a platform by the most fashionable definition today. Maybe it is, but not quite.

1 "A reprogrammable digital infrastructure that facilitates and shapes personalized interactions among end-users and complementors, organized through the systematic collection, algorithmic processing, monetization, and circulation of data".

And this is exactly my point: the relevant question is not whether something is similar enough to another thing so they can both be considered as a 'platform', but, rather, their differences. The 17th century Amsterdam stock exchange might be way too different from a blockchain-based decentralized exchange of today to be considered as a platform, but I think Facebook is way too different from the Amazon cloud services as well, even though they are both accepted as 'platforms'.

These differences matter, because each issue, problem, question, challenge we face with regard to the social impact of digital services is rooted in their particularities. These problems, unlike the term 'platform' are very concrete. How do we tax platforms in local jurisdictions? How are those taxes calculated? How do different parties transact via these 'platforms' as institutions? What is the status of some of these parties, such as those who do manual labor on some of these services: are they employees or are they individual entrepreneurs? But hey, this labor question is more pronounced in services that provide delivery services, while they are less interesting than in e-commerce services, where you can sell your used Ikea furniture.

So eBay is a platform, Uber is a platform, Facebook is a platform, but they don't raise the same questions, in fact, they raise very very different issues, they pose very very different challenges in very far away fields, and for me the differences these questions are more important than having a nice little term to cover them all. Why would I want to find an umbrella term that aggregates all these different systems in one category, if the questions that they pose are very different?

I think they first of all have an epistemological relevance. So you do not like the term, since there is no reason to bring it down to one thing, as it is more complex and concrete, and a single word only hides the complexity.

Yes, that would be my problem. It is like a very primitive classification system, as if the biologists have stuck with the five kingdoms of living things, and thought that their work has ended by calling everything from mollusks via insects to mammals "animal". Yes, they all may be animals as opposed to plants or fungi, but Uber is as different from YouTube as a fish is different from a spider, so we may want to step beyond calling them all simply 'platforms', and start classifying and treating them differently.

How do you think the study of digital platforms – at this point, we might say digital technologies - has changed over the last decade?

To be honest, again, much of the literature that I read on this topic leaves me rather cold. And this is mainly because of how academic knowledge is produced and circulated nowadays: the winner takes it all logic, combined with the 'novelty' of the field puts a premium on being the original trailblazer person who names things. It is not just possible, but quite desirable to make a career out of inventing and successfully marketing simple, seemingly new, exciting, attractive concepts and theories, like, for example, filter bubbles, or nudging, because it takes lots of time and tedious empirical work before it turns out that the appealing theory has nothing to it.

So a large chunk of scholarship, in my opinion, is about, on the one hand, trying to come up with the next big idea, on the other hand, trying, and mostly failing, to connect the most fashionable theory of the day to the ever-changing empirically approachable ground reality. Few authors take a truly original, or empirically well-grounded, or historically thoroughly contextualized, or at least not blatantly US-centric approach, which is a pity.

I see immense value in trying to systematize knowledge with regard to the social impact/organization of complex digital techno-social systems (i.e.: 'platforms') through an in-depth dialogue between different fields, such as economic theory, social theory, politics, ecology, cultural studies, etc.

This is what we have been doing with regard to the first and second industrial revolutions: trying to put the pieces together about how Ford's invention of the production line brought changes to the status of the individual worker, to the automation of labor, how in turn that changed the knowledge of the individual, how it stripped workers from their expertise, how it replaced interchangeable and easily learnable movements, how it broke up communities, how it subjected people, money and labor into market forces.

We are in dire need for such a comprehensive understanding of this last industrial revolution, what it is, and how we change with it. But because we are in the middle of that transformation, and we have little external view on it, much of the knowledge we can produce is by necessity speculative. I think the use of the term 'platform' reflects this cluelessness.

But here is my problem: while we are fidgeting with this term: 'platform', we are facing rather concrete, serious, high-stakes challenges, such as: How do we define the status of those who provide resources to this industrial production process? What are their rights? What are the threats and risks they face? How do we protect them from those risks? What are the tools we devise to make sure that we do not live in a horrible, horrible society? And I don't see how this term, the 'platform' helps us getting to these questions.

To put it more concretely, I think we are living in a period that is comparable to the first few decades of the first industrial revolution, when horrible things, such as pervasive child labor in coal mines were happening. Children were the ideal workforce in that industry: they were small so they could crawl through the mines, it was easy to beat them into compliance, and they were cheaper than adults. It took decades to get kids out of that hell: to define laws that prevent child exploitation, define the maximum amount of work to be done in a period of time through unionization, and define what kind of responsibility a workplace has toward its employees.

I think we are better off - to continue with the parallel - if we focus on what this new form of production or resource coordination does to various (vulnerable or not) stakeholders, and society in general, instead of trying to define what is or is not a 'factory' or in our case, a 'platform'.

That brings it to the democratic reaction time. Of course, the rise of trade union laws was not

possible before the industrial revolution. But then, you know I am a reader of Niklas Luhmann, and he was literally criticizing the entire sociological tradition by saying a very simple thing: the world that we experience nowadays is so different from the one of Durkheim, or even of Marx, that simply using those theoretical frameworks and trying to update them is not working. Does digitalization imply a radical theoretical rethink? For instance, the constructivist idea of system theory is that you look at yourself through the system, and that produces meaning that otherwise, you don't have.

I fully agree that a big part of the challenge is not having the right social, economic, political, cultural theories which could describe the dynamics around us in any satisfactory manner. I agree, Marx's labor theory, our media theories developed for the broadcast age on audience labor, our social stratification theories, our cultural theories on value are becoming harder and harder to apply to the world around us, For this reason, I fully support any quest which decides to rethink theory from scratch. That being said, I don't think the platform discourse is, or has produced a theory. Rather, it's a floating signifier that allows people to imagine everything into it.

The interesting things are, for instance, understanding the entire apparatus of computation on a global scale as a serendipitous unity. The idea is that of geodesign: you either consciously design the global infrastructure or you don't, but then you have already taken a decision.

History offers some interesting takes on planetary scale computational apparatuses. We are in Amsterdam, and the Dutch East India Company or the British East India Company were private enterprises that operated such planetary scale infrastructures. They built a colonial system, they had standing armies, they had forts, plantations, and logistics. They controlled the financial market as a private enterprise. But this private enterprise never existed alone. When it went into certain territories, it had to work with, and relied on, all the local social structures, religious beliefs, and authorities to actually be able to operate.

At one point the state also came in and tried to assert its own power, transforming the colonized from private slaves to something else. Some colonial histories span from private parties exploiting peoples and territories that they regarded as *res nullius*, via the state coming in and redefining what's happening in these territories to quasi or full independence of former colonies, with reparations in sight for the future. I think these dynamics, how private exploitation transforms into public order and independence may be relevant, if we think about how all the digital companies have managed first to lay hands on and commodify previously unclaimed resources such as user creativity or personal data; how first and foremost the EU, but also China and the US is trying to enter this space, and address the economic, social, political, cultural aspects of these exploitative practices, etc. but again, this has nothing to do with 'platforms', and everything to do with the clash between public and private ordering, and there are interesting historical parallels in this domain as well.

This is actually a widespread metaphor. Google like the conquistadores landing in South America and saying: this is mine. This time with human experience as the territory.

Exactly. But it is important to realize, that there is nothing predetermined on how that will play out in the long term, and we have every reason to assume that it'll play out very differently in Europe compared to China and the USA. A difference that is obscured by focusing on 'the platform'.

One that can be used and is historically accurate is global platforms as the East India Company or as in the Venice empire. These companies were doing their own interest but also the interest of the state somehow, everything was mixed. Google is working for himself, but also working for the USA. Would that be your metaphor?

I am not using this example as a source of metaphor, I am using this to point out that there is a rich history, intellectual tradition, and philosophical understanding of the world around similar developments, and if you don't actively look for them, because you're chasing the novelty discourse of 'the platform', then you lose out all this knowledge.

Yes, but what all these philosophers are saying is that you cannot really escape that. It's kind of constitutive of our way of thinking, if you use the word 'colonizing' it's already a metaphor, so it's more about choosing which one you like. But I do agree with what you said about situating the platform discourse in the long term and avoiding naïve tech-exceptionalism. Now, switching to the issue of trust, as you also have a background on piracy and commons, there is a discussion on rebuilding these systems in a different way from what it is now. What are your speculative proposals about this?

As an economist, one of the frameworks that makes me think about the future is the following. All these network services are concentrated because of network effects and economies of scale. But regular, run-of-the-mill marketplaces also suffer from a similar problem, in the sense that every market player has the intrinsic motivation to develop into a monopolist. They may not succeed, it may play out much slower, so there is much more room for mistakes and most firms fail to achieve a monopoly position, but given enough time markets also tend to concentrate. Market concentration is thus especially troublesome with digital services. So, for me the issue is how to prevent the monopolization of certain markets/services, which often underly whole societal functions in the digital society.

But again, private monopolies already existed before, and we have a number of ways to deal with them: sometimes they are nationalized, sometimes they are treated as a common carrier and they face very strict obligations, sometimes they are broken up, unsuccessfully, sometimes the state provides competition, etc. So the question, for now, is this: how is it possible to keep concentrating digital markets open, or simply open enough, so there are constantly new challenges to the ever-concentrating firms and services in dominant positions? I see many reasons for the state to, if not completely nationalize certain firms, then at least to open up, bring under democratic control certain parts of their operations, such as the data they collect, or the recommendations they make, or the prices they set, the conditions they set for their participants or clients.

To a certain extent, something like this is already happening, at least in the EU, with platform labor regulation, digital services act, the new data act. Even if these pieces of European regulation are not about the nationalization or the breakup of digital monopolies, but they are actually removing a substantial amount of discretionary power from the hand of the private actors, and bring under close scrutiny certain parts of their operations. So, I can imagine that with this approach, regardless of what a digital service does, we can be sure that at least in Europe, some societally relevant aspects, such as how they treat labor, their liability for the services they provide, the prices they set, the algorithms they use are covered by regulation in such a way that the local societal interests are realized, and taken into account by these private actors.

Can we do it inside the existing legal framework?

Yes and no. But there is no single answer to that, because the west, which I assume to be the context of your question, is not a homogeneous political, legal or economic entity. The major western powers, the USA and EU have very different interests, different geopolitical concerns, economic priorities, approaches to fundamental rights, and different social and political-cultural structures, and they increasingly see each other as competitors, and frenemies. The EU is in the middle of regulating the hell out of what it sees as predatory US companies. The US political system, for other reasons, is less willing and/or able to follow suit.

Is this kind of regulation really working in contemporary democracies, with their procedural legitimation? Did the GDPR make things better when it comes to issues such as indiscriminate data collection and profiling?

Yes, I strongly think it did, even if you can find a gazillion reasons to complain. That being said, there is a larger question looming in the background. We are living in very turbulent times, technology development is rather fast, risks both known and unknown become visible almost every day, harms sometimes are very tangible, and there is almost a universal moral panic. At the same time, there is an almost universal techno-optimism, or solutionism, which is the mirror image of the moral panic, and I think both policy and socio-legal research is responding to both this moral panic and the tech optimism.

I don't think that it is the task of the law to actually respond to moral panics. Yet, people, concerned citizens, elected officials, and the academic discourse is often pushing for rapid solutions to what looks like very urgent, very important, very consequential, and very harmful problems. Such problems are often defined by grandstanding theories (as discussed above), without little empirical grounding. And even if at one point in time there is some trace of measurable harm, the situation is so volatile and nuanced, that what law and policy response to it may be a mirage, or simply a fleeting moment in a larger scheme of things.

We certainly need a better understanding of what is a problem and what is a non-problem; and if there is indeed a problem, is it a problem that requires a political solution, or a legal solution, or some other response. We also need a better understanding of how social governance mechanisms can address an issue. So, on the one hand, what you imply about the GDPR

is true: it may not have put an abrupt end to indiscriminate data collection. On the other, I would like to ask you: what is your expectation vis-a-vis a legal instrument? In my opinion, the law, a new piece of tech regulation is not a burly police officer, which, if you have one, will gladly beat bad guys into submission, and keep your streets safe and clean. Instead, any such instrument is creating a framework in which societal stakeholders can start renegotiating their relationships with each other, in a manner which hopefully leads to more just, equitable arrangements.

What do you think of the attempts to regulate by design?

I am always surprised by the discourses which take the code as their central subject because it looks at code as if it did not have any context. On the one hand, code is developed by people, people are employed by firms, which leads me to say that you regulate firms, and not code. On the other hand, your (societal) goals are not related to the code either, but to the society, to the economy, to culture. So again, you don't regulate code, but you spell out what kind of world you want to achieve, and make sure that everyone knows what their role is in that. I don't think anyone's problem is with how a piece of code behaves. Instead, the problems are usually related to the relationship between a firm (using complex digital machinery) and various other societal stakeholders, and so you regulate to allow for that relationship to change. But that rarely involves directly regulating 'code'.

Society and regulators should spell out the policy goals that they want to achieve in terms of fundamental rights, public health, the divisions of risks and harms, and then make whoever deploys whatever techno-social machinery responsible for obliging with those expectations. So, I think that code is not very relevant. Again, I think that there is much to learn from other fields, in this case, for example, how regulation in the urban/architectural spaces works.

What do I mean? I think architecture, whether it is about the design of a single building, or of a whole city, defines social structures, interactions, flows and processes. It works by imagining and creating the conditions for certain qualities of human coexistence and cooperation. In some sense, you describe, through policy, what kind of society you want to have on two levels. On the macro scale, you use zoning regulations, building regulations, development plans to spell out how wide streets you want to have, how good the air quality you want in the city, how much space you want to give for public transportation, etc. On the other end of the spectrum, you address some specifics of an individual building: fire safety, insulation, and such. But in between these two, there is hardly any regulation. An architect may design the buildings, and urbanists may draw city plans, but it is the citizen who creates the cities in the in-between space.

I strongly suspect that there are many parallels between regulating physical spaces and digital spaces. In both scenarios you want to make sure that there is an envelope, a social envelope, so whoever wants to bring in a service knows what is expected and can plan around that, on the other hand, you may need to spell out the regulations that each and every builder in that space have to comply with to provide for some fundamental considerations. But in between, we must leave a space open to emergent processes. And by that, I don't just mean refraining

from regulation, but actively keeping the space open, i.e.: protecting it from enclosures of all kinds.

Switching to the etymologies, if look at the word public, it refers to the opposition ius publicum – ius privatum, but it also is the opposite of secret. To which extent is the issue of invisibility relevant? Is transparency (or opacity) the real concern? And if we cannot really achieve meaningful transparency, or even if we can, we cannot really put it to work, because we don't have the expertise, the time, the resources to check, to verify, should we instead focus on the outcome rather than the process?

Most of our social practices are invisible to us. We do not know how that building reached its final shape, we do not know what kind of considerations were taken into the decision-making process, what kind of arguments, concerns, and constraints shaped the ultimate design. Even in supposedly public institutions, academies, science, research, we do not know what happens in the kitchen or rather, in the lab, we only know some elements of the process, and of course the outcome.

I understand the line of logic that says: we do not really like Google, we do not know what they are doing, but in order for us to decide whether we like Google or not, we want to know how it works. In this line of reasoning our first and biggest problem is the lack of transparency. But that is only one path. Maybe the other path is saying: Google is a fact. The same way as libraries are a fact, or science is a fact, or Ernst & Young is a fact. We may or may not be able to see how these things operate, but their output, and the impact of their output are apparent. So it is possible to regulate with the following approach. We are not interested in how you do what you do, we're only interested in the output. We don't want to control your black box through transparency, or regulating its code, but its mistakes are your responsibility.

When you talk about the private production of trust, is it something similar, in the sense that historically it's a shift from one thing to another, outsourcing trust to private parties that perform a public function?

Everything we do, such as introducing a widely used digital technology to facilitate novel economic transactions between strangers (as Airbnb, or bitcoin does), restructures the social fabric. The question is then the following: What are our normative expectations regarding these changes in the social?

To give you an example, there is a recurring question around the use of nuclear power which we give different answers to in different times. So, we have this new great source of energy, it is cheap, it produces zero carbon emissions, etc. etc. But sometimes it blows up. For decades, the balance tipped in favor of nuclear power plants. After Chernobyl, but especially Fukushima, the risks seemed to outweigh the benefits, so countries started to search for alternatives. We are currently in the middle of a ginormous energy crisis and heat wave in Europe, and interestingly enough, mothballed nuclear power plants seem to offer a better option than coal plants.

Nuclear energy is one technology with a widespread social, economic, cultural footprint. Digital technologies may look different, but ultimately, they raise very similar questions: how do we measure the risks and benefits associated with their use? Are there ways to make them more secure? How do we distribute the harms their use inescapably produces in society? How do we change the path if the previous consensus about the right balance cannot be maintained anymore?

When it comes to the relationship between the map and territory, you have written about the wrong choice of performance indicators, which is a form of mapping. Are these cartographies not reliable? Can we trust them?

I think that any system of knowledge creates a more or less arbitrary system of representation of the underlying truth behind it. This is not specific to digital technologies. You know all these debates about how different projections represent different political structures, such as the Mercator projection being Eurocentric, enlarging the north at the expense of the equator. This means that a map is never just a tool for navigation, it is always a representation of an underlying territory through pre-existing power/knowledge structures: there is no innocent epistemology. The problem is whether we are aware of how our maps distort and shape our perceptions. I have to note that a map is rarely distorted in and by itself. This question is only relevant in the context of the alternatives, the alternative modes of representation, alternative epistemologies, alternative power structures. For me, it makes little sense to talk about the bias in Google's search results *in isolation*. The discussion starts when I'm in the position to situate what Google does in the context of alternatives.

Well, you keep on going back to the microphysics of power, while I ask questions from the start from the global. Then, what is new about digital technologies?

Our generation in this rather unique position, where we are at the beginning of a long historical cycle or period, where some fundamental shifts in the underlying technological, social, and political, ecological conditions are unfolding. To bring a historical analogy: we are not in the middle of the long 19th century; we are in the first days of the Russian revolution.

Our generation, and all those who follow, are born into conditions of pervasive uncertainty. Unlike our parent's generation, who also had their own uncertainties, but they were more or less known and calculable, we face and have to deal with unknown unknowns. This means that many of the routines and reflexes which we inherited from our parents, that we have taken for granted, may not be very useful, effective, or appropriate, and therefore they need to be reassessed.

One such reassessment takes place in our trust relations. A large chunk of how and what we trust in life is inherited from our parents. We inherited trust or distrust in institutions (depending on your nationality, or your skin color, for example), we inherited trust or distrust in various societal actors, we inherited trust in technology, technological progress, etc. This inheritance is now under intense scrutiny in every dimension. The shift in trust relations and structures plays out across several time-scales: intergenerationally as much as on much smaller time-

scales. 15-20 years ago it was easy to think that innovative garage startups like Google will provide an alternative to extractive global corporate capitalism. Well, we had to revise these hopes and expectations some time ago already. The speed of not just technological, but also political, or economic, or ecological change is such that in the course of a few years, within the lifetime of a hamster, or a cat, things can and often will radically change. Everything is up for grabs – or to quote Marx, all that is solid melts into the air.

My research is focused on how seemingly solid trust relations melt into the air due to the fact that, on the one hand, these trust relations get remediated and digitized (think of the digitalization of public services, education, healthcare, policing, etc.), and on the other, new, purely digital, algorithmic private trust infrastructures start to play a prominent role in how we trust each other in the digital society (think of blockchains, Uber, Airbnb, or e-commerce services).

There are several, fundamental questions around the digitization and privatization of our societal trust infrastructures. One of the most critical issues is whether these digital trust producers, (which you can also call ‘platforms’), are trustworthy: i.e.: can we be sure that they can do what they promise to be doing, whether they keep their users’ best interest at heart, and whether their values are aligned with the values of the communities they serve?

In my paper on mediated trust, I spell out why we have little reason to think that all those digital services we became reliant on are trustworthy. So the question is: how can we make these digital services more trustworthy? I think the story of the last few hundred years is that even if we started out with horribly harmful and abusive systems, in due time we managed to reign them in and make them more trustworthy. There are countless systems, both public and private, which have as much control or influence over your life as our current, digital overlords. In the last century or so we managed to govern car makers, pharmaceutical companies, the healthcare system, or the education system, mines and global trading monopolies in a manner which, id’ strongly argue, made them more trustworthy. So, through immense work, we ultimately managed to create a system in which everything can kill you but very few actually will. Where everyone has the incentive to save at the expense of your safety, security, and health, but actually, they don’t.

With technology, I think we need to follow the same path, and create a system in which these wild, self-interested, selfish corporate actors are required to take their environment into account. They need to internalize not just the interests of their corporate shareholders, and techno-kings, but also the interests of those social, cultural and political structures they are embedded in.

As for this accountability, the etymology of the word responsibility can be traced back also to the concept of ‘taking care’. How do you make these platforms accountable? More boldly, how do you make them infrastructures that enable care practices?

Again, I’d like to push back on the use of the term ‘platform’. In my view, we are talking about corporations. There is a legal entity that uses certain technologies to achieve its goals. There

are many different forms to organize economic activities, some corporate forms respond to anonymous institutional shareholders, others, like worker-owned co-ops respond to the needs of their workers, etc. If you want to have systems that respond to the needs and demands of those who use them, you have to design them in a different way. What is important is that this is not the question of technology design, it is institutional design, legal, economic design.

Ok, let's try to see the same thing not through moral lenses but via systemic lenses. Is it a problem of risk, of encapsulating some trade-offs? Political decisions never create win-win in modern societies, but they will make some people happy and some unhappy. How do you decide that by design?

That's Ulrich Beck's point, he says: the role of public policy is not to redistribute wealth, it is to redistribute risk. This is what policy should be doing, and this is what accountability is. If you're a firm, then there must be limits on outsourcing, collectivizing risks and harms. It is the role of regulation to force those who produce risk and consequently harm, to pay for it, and shift risks away from certain groups in society to others (from the most vulnerable societal groups to shareholders, for example), or from certain time scales to others (from long term to immediate).

But how do you allocate the risk of global challenges as climate change or planetary-scale computation?

That's the tough question: what are the good ways to actually manage planetary scale risks? How do you know and why do you care? I see that when Google employees walk out because Google wants to do business in China, or censor search results regarding Hong Kong or Tiananmen square, then they are shifting, or trying to shift risks and harms away from Hong Kong denizens to shareholders or managers of the company.

But this is only one (although rather effective) way to shift risks. Regulation is certainly the most widely used tool. You can certainly regulate technology within the EU and within the nation-states. China and Russia – understandably - are more aggressive on this point than western countries, because they have a different understanding of risks, and they see US technology diffusion as a threat to Russia's or China's sovereignty. Europe is also framing these questions in terms of sovereignty, but also in terms of fundamental rights, and uses regulation to shift harms away from EU citizens to tech companies. In that sense, the GDPR may not be a complete success, but it did shift some costs, risks and harms away from the data subject to the data controller companies.

The main question in this context is whether you know the risks you need to address. When it comes to the regulation of different technologies, we can distinguish between two approaches to deal with risks arising from the application of novel, innovative technologies. One approach is what we do with new pharmaceuticals: the innovative new solution must pass through extensive testing across different populations, to measure the effectiveness of the solution and measure the potential risks and harms. Only if the risks are known, and

below a certain threshold, only then you allow innovation to enter the market.

The other approach is what we (in my opinion, rather unfortunately) decided to follow with digital innovation: we let anyone launch highly consequential, but absolutely untested technologies in the very middle of our bodies, social, economic, political structures, and then try (and usually fail) to deal with the havoc which predictably ensues.

Is it the creation of a system of detection of technological change?

We are currently unable to systematically detect social or individual harms caused by the unintended consequences of technology use and adoption. There is no institutional framework, we are lacking in methods, and of course, we do not have access to data. Scientists, and NGOs are try to do their best to find evidence for harm based on the insufficient data we may have access to or generate. But this is far from any well-established monitoring and early warning infrastructure we have built in other domains.

That being said, the pharmaceutical approval process is designed to detect harm in a controlled environment. You don't innovate in the pharmaceutical industry by putting out some molecules on the market and then you see who dies and who survives. But this is exactly how digital innovation works at the moment, as in the case of, for example, self-driving cars. Our, or rather, the tech developer's current innovation approach is to "move fast and break things", which means learning through failure. Its goal is not to be prudent, but to fail early, fail often: be destructive, and learn from the mistakes. It is a huge problem that the failures, the mistakes, the things broken in most cases are us, our institutions, our social relations, or economic structures, etc.

Now, I think we are at a crossroads: we either stick to an innovation policy approach, where one can innovate and put everything to the market without any knowledge of prior risks and potential harms, or we force innovators to think, in advance, something about the harms that their innovations may produce, and make sure that the potential risks and harms are addressed before the technology is introduced into society.

But isn't it the case with China? Historically, when a new technology would come out while not being sure of its impact, it would ban it. The state comes in, evaluates it, and then eventually allows it in a way that it can control it.

I'm not fully familiar with the processes in China, but from afar it seems that it's a little bit of a hybrid, so what is happening with Alibaba and Alipay, there is very close supervision of these private companies, which innovate, if you like, more or less freely, but in the very moment when the risks of harms of that innovation become apparent, they start to put the system at risk, the state is in the position to say: the experiment took so long, we understand the risks now, so we impose a change.

A last question. Until now we have been talking about the law and the role of policy. However, can we say that all of this has constitutional relevance?

I am a social scientist, so I see the constitution both as a written word, and as a system of interpretation based upon it, and I know that the two will be rather divergent. A constitution is a structure that puts a formal rigidity on social relations, but it doesn't ossify social relations. There are all these other factors in place. Maybe law has some special weight in general, because ultimately if conflicts end up in court, or as legal problems, then the state has all the power to define the outcome of conflicts. But whatever the constitutional order, there are at least two other domains with I'd say equal relevance: how the firms through their digital services try to frame the domain of social and economic relations; and the actual social practices that take place on those systems. There might be substantial differences between the constitutional ideals, the frames defined by the firms, and the practices on the ground, and which has the power to shape the others is usually an open question.

Constitutions are relevant, the constitutional order is relevant, and it's also important that we keep an eye on how far we are from the constitutional ideals, and whether there are actors in society who declare themselves to be outside and immune from the constitutional order. What I am trying to say is that we tend to resolve very few concepts within the framework of constitutional order. Most of the conflicts are resolved in other ways. It's a choice if we decide to use that particular framework to resolve any conflict. But this is not the only one. It is certainly better if the relationship between the practices of the firm and the constitution is clear, it will help everyone, but it is not the only way you resolve these conflicts or structure society.

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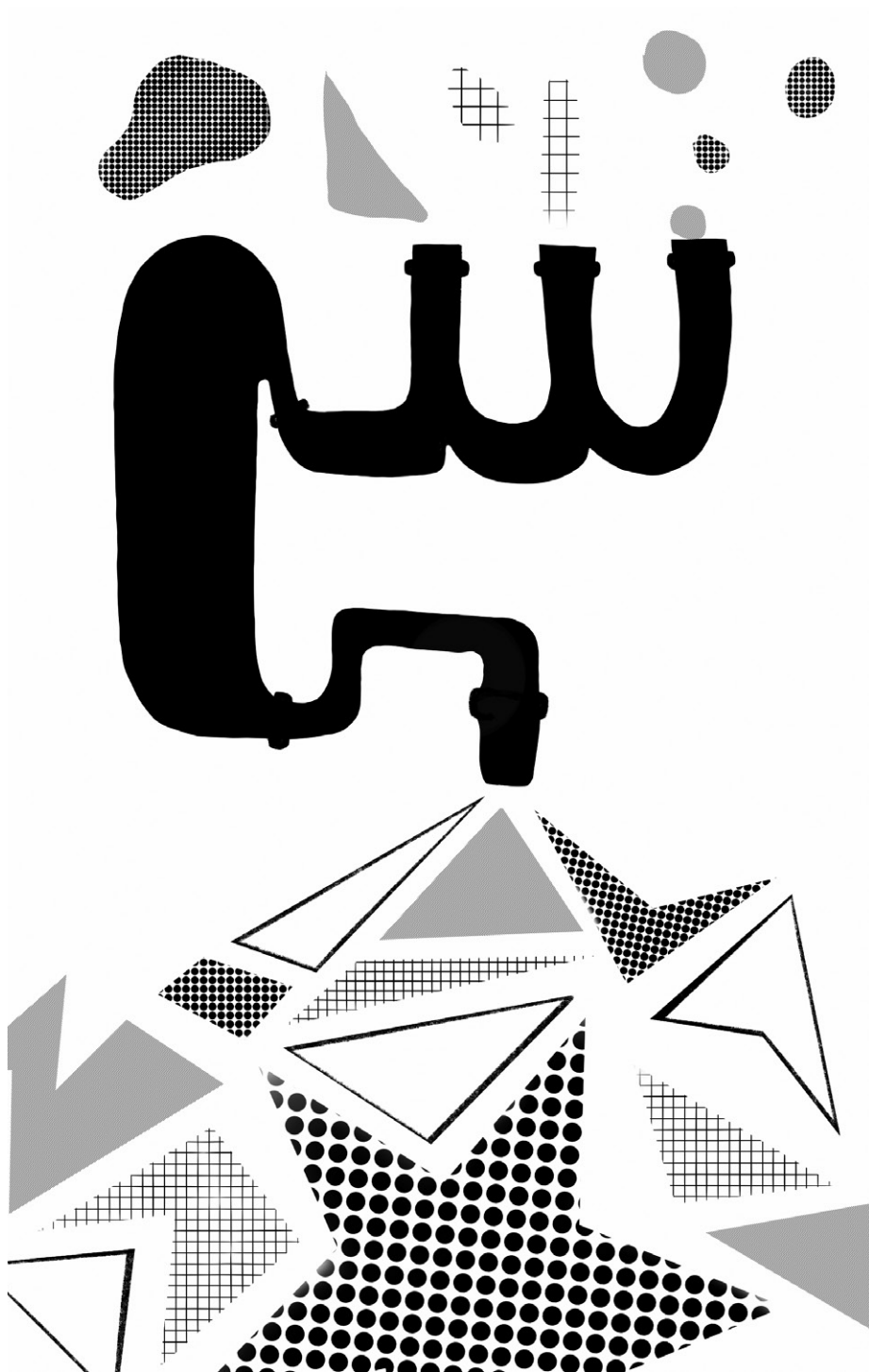


Fig. 4: Platform as Catalyst

A CRITICAL APPROACH TO DATA LITERACY

INTERVIEW WITH STEFANIA MILAN

Stefania Milan is Professor of Critical Data Studies at the department of media studies, University of Amsterdam. Stefania has been working on many projects dealing with datafication, the societal role of algorithms and their impact on citizenship. In carrying out her work as a researcher and a professor, Stefania always combines her role as an activist. In meeting her for the first time for the interview, we figured out that we come from the same area in Italy, and that we, therefore, shared the same dialect. Hence, using the English language was a bit funny, but we got along quickly and discussed a couple of hours about data literacy, infrastructure, social movements, and feminist perspectives on platformization. The interview took place in the café of the Allard Pierson Museum, located in the very center of Amsterdam.

Could you provide a definition of the platform?

It's a million-dollar question. I am very much interested in infrastructures, in the pipes and what goes on underground and overground, like antennas and all of that. It is of great interest to me, especially when these things are invisible, and they become visible typically only when they break, right? If you cross the center of Amsterdam these days, there's a lot of digging out the streets and you see all this network of colorful cables. When I think of infrastructure, I think mostly about network infrastructure: Internet, fiber optic cables, antennas, and up-and-coming infrastructures like facial recognition cameras, and other forms of intrusive technology.

I approach the platform from the point of view of infrastructure. I think the platform is quite interesting because it is an infrastructure that is actually quite visible compared to other infrastructures. Compared to, for example, a website, the platform is a more complex structure that allows you to perform a number of different functions and access different services. And in the self-presentation of the identity of the platform itself, there is also the exercise of making the platform. I think about Google or Amazon. They give you access to a number of services, including identity management, social networking services, shopping services, and stuff like that. But one of their selling points is the convenience and centralization of all of this in one individual spot.

When I say that the infrastructure is part of the platform identity and also self-preserving imaginary, I refer to the fact that part of the marketing of the infrastructure company itself, and the product of the platform, is actually that line. I give you access to a number of services in one place, so it's almost like making the scaffolding visible. It is amplifying the empowering effects of the scaffolding, if you want. Empowering us – not in political terms – is part of the marketing language. The platform centralizes a number of services, so you have a one-go shop where you can access whatever beautiful things.

What metaphor do you think about when you talk about the platform?

My metaphor actually is very different from what I just mentioned, it comes from the animal world. I would think of an octopus, as something that essentially has a lot of ramifications—in other words, the octopus' tentacles. And there are ramifications that are a bit potentially destructive – they are not exactly nurturing, although the industry imaginary would point to empowerment. But in fact, I think of the platform as something that envelops you.

How did you start studying platforms in the first place?

It's a good question. I think they are unavoidable today, especially if you are interested in collective action. I have a background in communication sciences, but I graduated in political theory. Then I went on to a Ph.D. in political and social sciences, specializing in political sociology and specifically in forms of collective action and social movements, among others. Throughout these years I have been very much interested in the possibilities of appropriation, subversion and creativity that technology offers to people. Again, I've always been very interested in the infrastructure, following technological development rather than how social movements produce content (that is probably the most common angle when you look at digital activism).

As I was saying, I'm very much interested in how people engage with the invisible layer, so with the infrastructure. I have worked in the past on things like: how do people build radio transmitters? How do people create antennas? How do they operate servers? Now, together with a number of colleagues - including Niels ten Oever - we are working on a project on 5G. All of these elements are part of our ecosystem, but we tend to ignore them. When studying social movements or organized collective action, infrastructure is not the most visible aspect. When we think about social change, we think about "alternative" content and the creation of different narratives. So we think of a norm change. I focus on infrastructure not because I discount the importance of norm change, cultural change or cultural production, but because I found my niche in trying to figure out how people mobilize on infrastructure-related issues. I am also very interested in the governance of (digital) infrastructure—topics that are drier and, in a way, might seem more boring than others.

I wanted to see how grassroots groups are active in the field of infrastructure, so to understand how people make sense of it, and how they turn them to their purposes for their political and social goals. That's more or less how I got to what I do following technological development. Starting from a very early passion of mine, that was radio. I'm also someone who is very much interested in different epistemologies and non-Western forms of articulating these developments. For example, I am passionate about Latin America theory and social movements' experiences and practices. If you then look at (analog) radio, this is something that had a long life and still has a reason to be today in countries where maybe literacy or simply access to certain technologies is more expensive. Just to say there is technological development and I follow the red thread of the infrastructure and the rules that govern it: governance and governmentality. How do we make sense of all that and how does it influence subjectivity, and collective subjects in particular?

I literally tap on the next technology. Now, for example, I am very much interested in facial recognition technology, that's going to be my next project at the Netherlands Institute for Advanced Studies. Looking at how it is implemented in the city, but also how people perceive it and make sense of it. As part of another research project, colleagues are organizing 'infrastructure walks' in the city to make all this infrastructure apparent to citizens and help policymakers to make informed decisions.

Especially in the Netherlands, there is a lot of emphasis on "public values" in technology and the assumption that people care about public values as they become enshrined in the infrastructure. But we know very little about what this literally means to people. Our IN-SIGHT project focuses more specifically on technology standards – what enables infrastructure to work with each other, which is something that can have human rights "wired in" it, right? But then the question is whether we should not really assume that people care but try to find out more about what users want.

One of the etymologies that I deploy is the one to the public, which brings the question of visibility. Do you believe that the digital infrastructure should become more visible and transparent?

That's a good one. I mean, I am a believer in the power of literacy. I don't think our society does enough to promote an informed approach to questions of digital infrastructure, their working and their governance. So in a way, policymakers, and both the school system and the education system play into the hands of platform providers in creating good users that do not ask too many questions. As long as the service is free or partially free and convenient and beautiful, and we get some good restaurant recommendations that are geolocated, then we are happy consumers. I do believe this should be overturned and we should be able to make informed decisions on pretty much any aspect of our digital life. When I say every aspect, it really covers a lot of grounds.

I live in Amsterdam, in front of a little square, where there are often some people dumping garbage. It is stupid to dump the garbage because you can just make a call and the municipalities collect it for you. But these people don't even go through the burden of calling the municipality. There was a time when this made me furious, and I wanted to report it. And you know how you report to the municipality of Amsterdam? Via WhatsApp! To talk to your local representatives you need to use Facebook or Whatsapp pretty much all over the country. This is not OK, because maybe I don't want to use Facebook.

There are more sensitive issues to worry about, and this is actually an Italian example. The local hospital organizes a Facebook Live event, showing sessions with specialist physicians. They are the equivalent of what they used to do in the past with television. It is one thing to provide education on this topic, but then it's going to be a different matter when you receive the audience's questions. Now the platform knows that you have a certain disease. People might discount the fact that they're actually exposing themselves and leaving an open record, a digital trace of their diseases. So essentially, what we see is that more and more of the public – the public administration and state services – are infiltrated by platform services. Now it is

less common, but to benefit from public Wi-Fi systems in many towns you can choose either to register with your private mail account – and it takes 20 minutes – or you can just log in with Facebook and Google as identity providers. So the platform sneaks into the provision of public services or the public administration system in ways that are extremely creepy. There you have the private that pervades the public for private gain.

The private infiltrates the public by thriving on existing inefficiencies; but we can maybe say that also the (public) government is actually employing all the techniques borrowed by digital platforms: gamification, cross-subsidization, nudging...

Definitively. For the governments it is a cheaper service, right? They don't have to maintain the servers, to create apps that are costly. But then it's also exactly what you say, the assumption is that the citizens anyway used to interact with others in a certain way. Why not exploiting it? In this respect, these days I'm playing with the notion of governance by data infrastructure. The fact that apps like the COVID contact tracing app can be seen as data infrastructures because they generate data and they also allow the public administration to make decisions based on this data. But then they become an instrument of governance, they are sort of regulatory data infrastructures. They determine whether you have access or not to a certain community. Think about the QR codes or the digital passport that essentially determines whether you can go out there with restrictions and if you can be part of the polity or not. They absorb more and more functions that used to pertain exclusively to public administrations. To the satisfaction of both sides, right? Because corollary to this you have the growing role of the private sector in the public.

What still motivates you to study this topic?

Two different things. One is my total fascination with technology - it's pretty awesome stuff that you can do with what has been invented so far. The possibilities that open up are amazing. So that is the fascination, which is in a way on the positive side. But at the same time there is the rage. I've always considered myself not only an academic but also an activist. I do have a political agenda in my approach to research. As academics, we all have this ambition of not only being just a book in the library. The extent to which one manages to do that, I'm not sure. But let's say also, as educators, we have the possibility to expose the new generations to this line of reasoning and to contribute to the creation of a more informed citizenry, which is a long shot. So it is both fascination and rage and the willingness to self-organize and to appropriate whatever there is or create what there is not yet for prefigurative reasons to make the world a better place.

How has the study of platforms changed over the last decade?

I guess there are many angles that one can adopt to answer this question. It's a very interesting, yet very broad question as well. I answer it from two points of view of my new job title, which is "critical data studies". What I have observed over the years - it is my situated perspective - it's the emphasis on data production. Not only because that is the business model, but also because the notion of datafication, and the related idea of a datafied society, has imposed

itself as a very fruitful angle to look both at the business model, at workers and algorithms that operate behind the platform. So I guess this has changed: there is a growing interest in the main currency in the operation of a platform, which is data.

Here by data I mean a lot of things: personal data, but also digital traces. There are other perspectives, maybe the perspective of someone who studies collective action in social movements. Mattoni and Treré wrote about movement-centrism, that is to say, the tendency in the fields of social movement studies to privileged social dynamics over platform dynamics in the study of, for instance, digital activism. There's been a tension in the field between, on the one hand, movement centrism, and on the other hand, communicative reductionism. People are looking at what movements do with technologies and platforms, because that's unavoidable today. If you happen to be a sociologist, you will look at movement and social dynamics, ignoring in a way algorithms and how they play a role in shaping the calculated public, or algorithmic publics brought together by a hashtag, for example.

However, if you look at media studies, communication scholars can be seen as verging on communication reductionism, meaning they would be mostly willing to focus on algorithmic dynamics, for example, partially discounting the social dynamics. I am somewhere in the middle. I take from Science and Technology Studies (STS) and the notion of the sociotechnical. If we look at the study of platforms from the point of view of people studying collective action, we have seen a growing interest in the hidden dimensions of platforms. Finally, by now the realization that you cannot just treat the platform as traditional media like television is well established. Scholars have taken note of the fact that it is much more complex and it has a direct influence on the way the public, for example, is shaped. This growing interest gives me hope.

Is it kind of a materialist turn? Moreover, do you think that platformization will last?

Yeah, you can also call it a materialist turn. It is very fascinating in many respects. Do you mean that it will last in terms of vocabulary or in terms of phenomena?

I mean both. We can imagine a future without Google, but no future without platforms permeating more and more sectors of society. For platform, I mean an organizational form and a schema. Will this stay with us?

I never thought much of that. On the one hand, as I was listening to you, I was brought to think about the portal. In the early days of the internet, the portal was a cool thing, right? A company wanted to operate a portal because the portal was doing something similar to what the platform does today. Centralizing a number of resources - internet search, access to your mailbox, access to news - in ways that were not personalized by algorithms as it is today. But it is an analogy in a way. 30 years ago that was the common thing. For most internet users it was probably impossible to imagine the advent of the platform.

So I am happy to be surprised. I don't know exactly what the next big thing is, but we can probably consider all the emphasis around the Metaverse or facial recognition technology,

which is not just used for identification or access, but also as a knowledge information mechanism. I wonder whether the platform is the best presentation format for all of this. I think we don't have enough fantasy – no matter how much science fiction we have read – to really detect what is coming next.

The platform as an organizational form is probably here to stay for a long time because, again, it's much more complex than just an interface. We can change terminology, and this is something that happens regularly now. Recently I was discussing the Metaverse with my students and they were very negative about it, while I expected them to be more ready to buy in. I mean, users have quite some agency at the end of the day in determining the success of a type of service but also a type of social organization. But as *forma mentis*, a way in which we approach an organization, the platform is probably here to stay for a long time. But the question really is: is it fit to embed more complex technologies as well? For example, technologies that put the body into the picture much more forcefully? The platform is still, to some extent, exogenous to us.

Portalization – with services like America Online or to a certain extent, Netflix - is really interesting. Regional apps such as WeChat kind of update that model. What would be your futable imaginary of platformization?

It's part of the selling point, right? The marketing part and the imaginary, it's all new and never seen before, but we tend to forget where it comes from, so we should be a bit more aware of those genealogies. My imaginary is all chaos. I believe in creative chaos, but I don't like prescriptive solutions. We have recently seen *The Public Service Media and Public Service Internet Manifesto* by Christian Fuchs. It's not necessarily about the platform, but that was basically what they were pointing at. Coming from a perspective of a country like the U.K. - where public service media broadcasters have a certain tradition and public role to play – the intention of this manifesto is trying to instill or promote a public service - minded approach to social networking services or platforms.

I would say that social media is a species of the genus 'platform'.

It is just that. The way we mobilize certain terms serves a certain agenda. This manifesto is also intended as a sort of campaign and the proponents want to mobilize a number of big players like the BBC and other similar public service broadcasters venturing themselves into creating the new Facebook or the new Instagram. This time not commercial, so not animated by capitalist logic or without advertising like the BBC would be. Advocates put public values at the center. I think these experiments are good rhetorical exercises. They have to be there in the sense that they try to make people reflect on what they're using and what alternative imaginaries there could be. And yet at the same time, I'm not exactly sure that any of this is valuable for economies of scale, for the way the tech industry works, but also because we tend to forget that the algorithms and the data collection are part of the product. I get a good service tailored for me, enjoyable, comfortable and relevant, precisely because there's data collected on me.

I tend to use DuckDuckGo instead of Google but sometimes I don't find what I am looking for, because the results that I am returned are less targeted. But generally, I don't have much hope for platforms to change in a socialist fashion. The technology at hand is too complex, and these economies of scale have too much of an impact on the final product and the quality of the experience for us to actually wish to create our own. There's been a number of experiments that have crashed on the field, but they have served as a sort of Polar Star, as some activists pointed out.

In the good old days - before the invention of the compass or the radar and satellite navigation systems - sailors would navigate to the seas having as a point of reference the North Pole. They were very clear about the function of the Polar Star: they followed it, but they never tried to reach it. They knew it was a good orientation point. In a similar fashion, activists' prefigurative interventions of the kind of the manifesto, but also the kind of the various alternatives to social networking sites that were created over the years, these experiments serve the purpose of showing how things can be different, but without necessarily assuming that you actually have to go down that road. They are in the luxury position of offering a service where the means is a goal in itself. So the way they operate, the way they try to put this together, it's a goal in itself. The goal maybe is not to offer really an alternative to Instagram or TikTok - because it's technically infeasible at the moment – and there is the problem of the critical mass, and others. But the idea is to make people think of alternatives, so it becomes an educational tool.

This connects to the map as a keyword and its relation to the territory. Digital platforms are maps that we use; we do things thanks to them; we live in them. And they are continuously reconfigured. In this sense they direct us, right?

That is a very interesting line of reasoning. The question about the map and the territory is a very *Alice in Wonderland* type of trip. The fact that the digital experience has substituted the physical experience is one aspect of this, but probably the least relevant. But this gives me the opportunity to think about the issue of literacy. What we should really want to do is to be able to navigate this complexity. I'm a believer in self-determination. We cannot turn Google public or nationalize it. What we can do is know how to operate within this complex digital environment, and be able to make informed decisions. I might be very happy to give up certain data, but I might also want to keep other data private, and the platform doesn't help us make this decision with the Terms of Services. It has to come from somewhere else.

What could be the solution - or a good entry point - is to remember that the map is always reconstituted around us. It is not fixed. No maps correspond to the truth: just think about the Mercator world map. Africa appears to be very squeezed because it is a Eurocentric map. The vantage point of whoever looks is built into the map, and it has been the case from the very early days. Think about the pre-Copernican ways of presenting the world, which were very much centered on the idea of God. That means that there always was a vantage point. This becomes particularly problematic when the vantage point, as you said, is reconstituted in real-time. What is disturbing with the Mercator map is that it is still the main representation of the world that we find in any school book today.

The problem is that the algorithmic process of reconstitution is not made apparent. It is part of the marketing line. That's why I connect it to the issue of literacy. I mean, what are the platform mechanisms and how can we make them more apparent to users? The project ALEX - Algorithms Exposed (now Tracking Exposed) was designed precisely with this idea in mind. What we did was develop this software that would allow users to see the impact of personalization algorithms on their "information diet". As an individual user, I only see what content I receive, not what I miss. The Tracking Exposed software gathers all public content from multiple users, centralizing data collection. For example, we collect data from the public timeline of Facebook, but also YouTube, Porn Hub and Amazon. We could then show the users what content they are served, and show in comparative terms what users are missing. What we tried to do is to create informed users. This software, which was designed for researchers, but also there is a sort of low-skilled user version, encourages people to make informed decisions.

I agree with the idea of awareness and literacy. However, going into the etymology of cybernetics, what difference does it make being aware of these logics in a controlled environment in which I am steered from one part to the other according to mechanisms that I can't access? And what could regulation do about this?

You are pointing to a weak spot in my theory of change. We all have our obsessions and one of mine is literacy. I am less interested in regulation and more interested in self-determination. But with the complexity of the environment and the technology at hand, the space for self-determination is progressively eroded. How facial recognition technology is implemented in the city through *Clearview* or simply facial recognition cameras spread around leaves me with two choices. I can be aware and then try to go around with masks – even though after COVID they can see through masks – or I can retreat in some isolated no man's land and decide that technology is not for me. But unfortunately, this is not an option for most people, and also not a desirable option. So indeed, it is more and more difficult to make informed choices. You might be aware of the problem, but then you might not be able to influence it. Here regulation can play a role.

With facial recognition technologies, it is like walking around town with your passports opened and glued to your forehead. Even the usual justification 'I have nothing to hide' becomes less and less appropriate. Independent research found that the accuracy rate of facial recognition technology implemented in London since 2020 was a meager 19%. This literally means that when one is stopped or arrested on the basis of a match by the software, out of 100 times, 81 times the identification is wrong. We need regulation because we cannot trust technology at the moment. Then there is the issue of discrimination, the fact that these technologies are trained on datasets that are biased.

There are a number of dangers out there so that it's better not to have such technology implemented in the public space. But what type of regulation? That is up for grabs. We have seen that unfortunately with the COVID pandemic and in times of emergency in general the techno-solutionist approaches were very much popular. We sort of paved the way for a lot of this technological rollout that Newlands and colleagues called "innovation on the pressure". In

the F.C. Roma football stadium, for example, facial recognition technology has been installed to identify who is running a temperature and is likely to be infected by the COVID-19 virus. Whereas - as we know very well – there are different purposes behind the implementation of these technologies. It is a “foot in the door” technique. In the case of the German COVID-19 contact tracing app Luca, despite the initial reassurances that data would only be used to curb virus diffusion, the data were shared with the police.

What do you think about the historical case of Cybersyn - in which a central authority explicitly tried to embed certain values in a digital infrastructure - and more generally about Europe's self-description as the regulatory ‘third way’?

That's a big question and a very good one. I mean, you rightly said that the European Union has tried to pursue two strategies. One is the regulation - norms, but also the normative approach. We have seen that with the GDPR over 4000 lobbyists descended from the USA into Brussels—so we have a sense of how potentially disruptive EU norms are to the industry. The other strategy is technology development, that the EU has been actively pursuing in the last number of decades with the framework. It failed miserably.

I would really like to see how much money is being pumped into this attempt. We are talking about projects which are mostly “research projects”, but they are supposed to be Research Innovation Actions (RIA). There are a lot of private companies involved as well. One successful program aimed at fostering the creation of “collective awareness platforms” in which citizens could operate and participate in the democratic process. The most successful of these project, one which is actually quite tied up with Amsterdam, was called D-CENT. The idea was to create a series of open-source and privacy-aware tools for economic empowerment and the exercise of citizen participation. The cryptography component of the initiative was actually the most successful component.

No matter how much visionary material was included in the call for applications or how visionary the staff of the European Commission. We still lack an ecosystem similar to Silicon Valley, with things like angel investors. We don't have that capacity. We don't have the culture either. You have regulation - think about data localization legislation - which has done parts of the job of defending citizen's rights. We know that a lot of our data now are in Ireland, by virtue of the GDPR. But is it really making a difference at the end of the day to the citizens? The values that we often have in mind actually undermine the very core of the business model of the tech industry. Same for the user's attitude towards them. There have been experiments to find out how much you would pay for using whatever platform without them monetizing your data. It requires a big change in terms of imaginaries and the expectations of users. It is easier to intervene with new technology than it is to intervene with technology that is already there. But if something is not being created or not put in place yet, you can put some boundaries. It is the case, for example, of facial recognition technology.

At the European level, it's one of the few examples of truly European campaigns, especially even when we look at technology-related aspects. In 2007 there was a mobilization against the data retention legislation, but it was still not European, it mobilized only the Germans. In

2020 a coalition of NGOs launched the *Reclaim Your Face* campaign, to ask the European Union to stop the implementation of facial recognition technology in the public space. They also tried (but failed) to gather signatures to ask for a European Citizens' Initiative, which is the equivalent of a referendum.

If you look at the mainstream narrative of facial recognition technology, I couldn't find any critical report in any Italian media about its implementation in Rome. But the *Reclaim Your Face* campaign is saying that this technology is dehumanizing and reduces us to data points in a database and discriminates against people. I recently went through the Schengen airport in Amsterdam and they have implemented recognition technology to speed up the border controls. I followed the "link to know more" and they were not actually saying what they were doing.

It is an interesting time for facial recognition technology. There's been a case right before COVID in which a New York-based protester had taken the street in the context of Black Lives Matter. He was jailed using facial recognition camera footage by matching the picture taken with content that was published by this guy on Instagram. This was a racialized individual. So this made the news which prompted the New York City Mayor to promise not to implement facial recognition technology. It also prompted IBM to stop developing facial recognition software.

Another etymology that I have selected is that of the word responsibility, which points to both accountability and care. Can we imagine platforms that enable care practices?

I am going to play it back to you with another etymology, and it is the word technology. The ancient Greek noun *techne* refers to a craft, to the art of doing something. It is not like a hammer; it is a series of social and cultural practices associated with that hammer. It would be very interesting to see what this way of thinking about technology would look like from the perspective of care. There is an example that comes from a feminist group of hackers in Berlin. It is a period-tracking app. There are disturbingly many for-profit period-tracking apps out there. Of course, they gather a large amount of data. It is like a digital calendar: they track the time of the month when you menstruate. Every woman has always done that, but on paper and pencil, and the data that you would gather are dates.

Now, these apps are problematic because they are for-profit and typically designed by men with near-zero medical expertise. They are sold as medical apps, so they also have a prescriptive approach in the sense that you are supposed to conform, whereas we know that bodies are all very different. Imagine you are 15 and use these apps; you may quickly think you are wrong. Behind this, there is the idea of the "standard human" that stands in for all of us. But the other problematic aspect is that a lot of these platforms gather completely unnecessary data to profile you because that's how they can offer the app for free. They literally gather information about masturbation, sexual intercourses, happiness and emotions - all variably irrelevant for your menstruation calendar. How do you feel? Have you done sports today? This is datafication and gamification at the same time.

And the quantified self.

It is. The group of female hackers in Berlin behind the Drip app decided to create their own period-tracking app to break free from the data exploitation approach and instead exercise collective care. It's a software developed by women, for women women-identifying individuals. This is an example of how you can actually create software - which is different from a platform on the level of complexity - which has this idea of care, but also of literacy. For example, the group organizes workshops in Berlin where you can learn to code. One of the first things that you learn in one evening is to change the background color of the app. It may look like a silly exercise, but it breaks free with the idea of technology as magic, with no community care dimension. Now the question is: what happens when you want to scale it up to an entire platform? The problem of the user experience is actually the worst of the factors to tackle. We know the difference between open-source software and commercial software. The difference between using a common line to access computing services or using a beautiful, colorful, functional user interface. How do you convince people to get out of their comfort zone?

I wonder what we can learn from the example of China banning American platforms.

It's difficult to imagine digital disruption in general. Imagine bailing out from services like Facebook. But then what happens in a moment when you do not even have data portability? All of my memories of many years of Facebook are gone. If you look at Russia and the shift and with some services being taken out like Apple Pay following the attack on Ukraine, we saw the pictures of people queuing to get into the metro in Moscow. We also saw what happened when Facebook servers were down so that Instagram and WhatsApp were not available. The question really becomes whether there is a political will to abandon very popular services and how much popular resistance you're going to encounter.

Or take the examples of universities. Universities are tiny countries, very tiny. The University of Amsterdam has 40.000,00 students. At some point, the University of Amsterdam had its own servers, then it migrated digital services like email or data storage to Microsoft. Email is a very basic protocol. You need computing power, but still, nothing compared to what you need to operate a metaverse, right? Yet the University of Amsterdam - like all the other universities I can think of - has progressively given up its control over these technologies to Microsoft and others. To fulfill some of my administrative functions, I have access to these shared mailboxes but I cannot use Thunderbird, a Mozilla product. I have to use Microsoft Outlook. Outlooks send me notifications all the time. If you block them, you miss several meetings because it also blocks the connection with the calendar. It's a total lock-in for a number of services that are actually very low-tech and could be easily implemented in-house.

That's pretty much what I meant with cybernetic normativity. You build these systems so that one needs the other one.

What is happening is very problematic. I am part of the Ethics Committee of the Faculty of Humanities. We give ethical approvals to research projects that have to do with personal data. We have to check it against the General Data Protection Regulation (GDPR) and

other legislation. We have to ask our colleagues to store all data on Microsoft servers. But I personally do not believe this is ethically sound. For our DACTIVE project, we run our own tech stack. We had our own software for doing qualitative data analysis, and also had a password-protected etherpad, an equivalent of a Google Doc, to write collectively. But now the university tells me that self-run infrastructure is bad. I am told that the infrastructure that I run in my garage is less secure, even though it is encrypted. So we have to use OneDrive or whatever. I have to tell people, if you want to do research, you have to put everything on Microsoft's servers. How can I, in my right mind, ask this person to sign a consent form where I promise full anonymity, if I use Microsoft's services?

We have several examples in which commercial companies don't refrain from sharing data with security agencies. Of course, they want to be friends with whatever department of the state is after a political dissident. In another case, digital rights activists were jailed in Turkey because of teaching human rights defenders to use encryption in their communications. You might ask: encryption is legal, right? Well, Cameron, when he was premier of the U.K. actually made some beautiful public speeches promoting the ban of encryption (not really realizing that encryption is pretty much at the core of the internet infrastructure). Social norms change across time and geographies, and I would like to make sure that I control the data people entrust me with.

To what extent do you consider platformization a constitutional issue?

I started with an animal metaphor, an octopus. We are pretty much enveloped and it is one of these deadly embraces that can squeeze you. This is also like hugs, they're kind of comfortable to some extent, but they can also go a bit too far and you cannot breathe anymore. That's why I often work with the notion of governmentality, and the subjectification of today's political subjects, which is mediated by the platform experience. We are what the platforms make of us, whether we like it or not. We should not forget that. We tend to think that we have a lot of political agency. In sociological terms, by political agency I mean the capacity to act in the world, making informed choices in negotiations between my agency and the structure around me. How you live in the world, in a way. But the space for that political agency is progressively eroded. That's another obsession of mine: how is political agency evolving vis-a-vis artificial intelligence? We increasingly delegate our ability to make a decision to artificial agents. But I do believe that there's still some room for maneuvering. I just cannot wake up in the morning and think that there is no agency and there is no space to negotiate my existence and my role in society.

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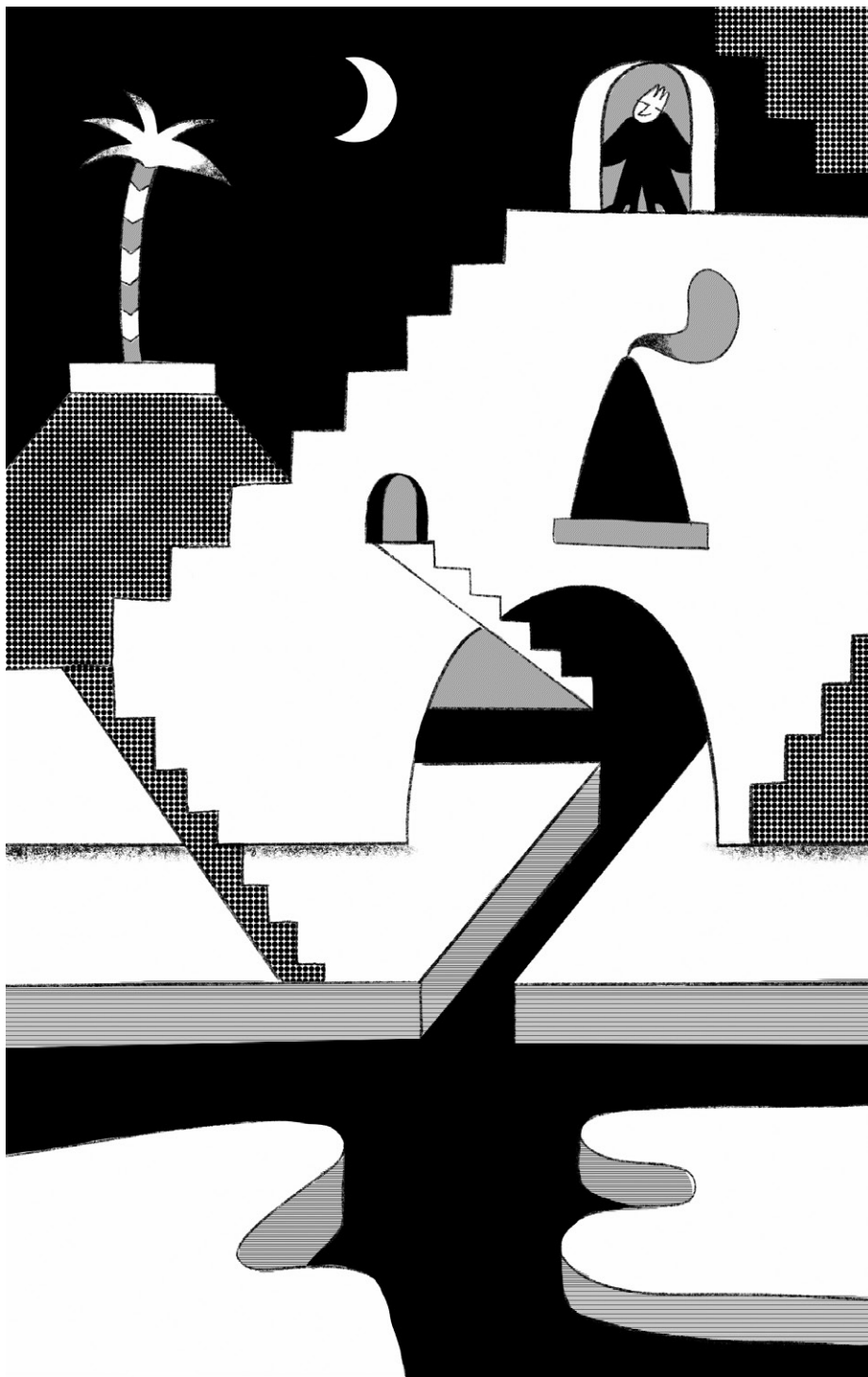


Fig. 5: Platform as Synthetic World

THE GENERATIONAL DIMENSION OF PLATFORMIZATION

INTERVIEW WITH DAVIDE BERALDO AND GIOVANNI ROSSETTI

Davide Beraldo is assistant professor of New Media, Data and Information at the department of media studies, University of Amsterdam. Giovanni Rossetti has been conducting ethnographic research with food-delivery riders in several countries. They are both part of the Dutch-Italian connection that has been central in the development of these interviews. During the interview, the theme of “generation” emerged in different senses of the expression: different generations of platforms; different generations of attitudes towards platforms; different attitudes of different generations towards platforms; as well as how platforms are generative mechanisms. Hence, if this interview was a meme, it would be: “Are platforms actually overrated?”¹. The interview took place in October 2021 at the Institute of Information Law (IViR), while drinking some fine beers.

Could you describe what a platform is? How would you define it?

Rossetti: From an economical angle, the classical definition is that of a multi-sided market, a central actor that relates different parties. The most canonical example is Facebook, which is primarily connecting different actors, such as users and advertisers. However, I think this definition alone draws clear-cut lines that risk ignoring many nuances. For instance, in the last couple of years, fast delivery apps like Gorillas and Flink have thrived in Amsterdam. Even though they are very similar to food-delivery platforms, they don’t work with third parties but with a network of dark warehouses, so they shouldn’t be considered platforms. In Argentina, the fast-groceries-delivery service is offered by food-delivery platforms; but there the dark warehouses are franchises, thus third parties. Paradoxically, the same person in Argentina is considered a platform worker, whereas in the Netherlands no. Then it makes sense to complement the economical understanding of what a platform is by adding that they are first and foremost digital infrastructures that collect and process data.

Beraldo: I would start from a more software studies perspective to highlight aspects of reprogrammability and interoperability. A definition would be one of a technical system that enables a number of operations, based on forms of reprogrammability, modularity, and interconnectivity. I would also immediately emphasize the rhetorical aspect of the term ‘platform’, the fact that it became a discursive device to be perceived as neutral intermediaries that do not implement specific rules (while they do), and thus evade responsibility.

1 “Is Fortnite actually overrated?” is a Youtube viral video where three boys seriously discuss the video game’s development on a sofa: <https://knowyourmeme.com/memes/is-fortnite-actually-overrated>.

What metaphor would you use to describe the platform?

Rossetti: I usually think of a platform as the pipe network of a hydraulic system. Users have the freedom to tailor the periphery of the system, installing sinks and bathtubs or placing valves or taps; they can control the flow of water and determine how much of it should return to the system through the drain. All the liquids will pass through the system, sooner or later. Ultimately it is the system that regulates how and how much liquid flows through it.

Beraldo: I have to say that explaining to people what a platform is, or why it is relevant to theorize about platformization, is sometimes hard. The easiest starting point is to refer to the most obvious idea of platform, the closest to the general discourse: a platform is a piece of wood on which people can stand on. However, this idea of 'being just something on which people stand' is the trick that corporations use to avoid responsibility.

So it's important to add another metaphor, in order to provide a critical perspective on platforms, since platforms do not only 'enable', but also subsume - they subsume different aspects of human life. I would then compare them to some kind of organism that eats and grows over others. A super-organism that creates forms of asymmetrical symbiosis, where smaller organisms are lured and then enslaved, in a sense. It is true that platforms allow for new types of activities, or allow us to do stuff in a smarter or funnier way. At the same time, however, they become more and more needed, and they incorporate more and more through relations of capture and dependence. Then a metaphor for it would be some kind of creature, a monster that grows by incorporating more and more things in itself.

Now that I think about it, my metaphor resembles the representation of the Leviathan. The platform Leviathan is made of our lives, our affects, our identities, our social relations. Our lives have always been mediated by technologies and institutions, but probably the level of control and heterodirection that platforms exercise is in some senses unprecedented - and more subtle.

Are platforms companies or are they more than that?

Beraldo: They surely are companies, and forgetting that they were companies was the mistake that some enthusiasts of their revolutionary power (me included) made. But they are surely more than that. Google rules not only its employees, but also its so-called users. That is probably the main difference. Of course, consumers are in asymmetrical power relationships with corporations, and the idea of the "social factory" has expanded the realm of capitalist influence beyond the walls of the factory a long time ago - but people as consumers are not directly managed and exploited (in a Marxist sense) by traditional corporations as much as platforms' users are by platform corporations. This is related to the whole debate on digital labor, data capitalism. Platforms, in this sense, are companies that rule more on what seem formally to be consumers or partners, rather than on what legally are their employees. They are new generations of organizations that blur the boundaries between established categories.

Rossetti: When they are companies, they are often more than that. They are markets and they sometimes try to be states. Indeed, if I think about Uber, I think about a market. Whereas the platform attempts to frame it as “The Market,” where demand and supply match at the equilibrium point, what we actually see is “a” market, featuring artificial price surges and drops that are centrally planned. It looks like the inconceivable dreams of cyberneticians working on economic planning.

How did you start to research this topic and what motivates you to study platforms?

Beraldo: Well, I have started using platforms to study society, more than studying how platforms influence society. During the process of figuring out a topic for my Master’s thesis, I knew I wanted to do something with protest movements and digital media, but I was struggling on the methodological part. Then some colleagues told me: why don’t you use Twitter data to study movements, rather than researching how movements use Twitter? It was the year of the Arab Spring, the 15M (also known as *Indignados*) and Occupy - the enthusiasm around “Twitter revolutions” was at its peak. I got some programming skills back in high school, so I turned to Twitter APIs to do research on Occupy.

During my PhD I continued with this line of research, but I started to problematize more the relation between the medium and the object. After getting more in touch with the literature in media studies, I realized how some of my assumptions, and some of the assumptions of certain “computational social science” approaches in general, were a bit naive. You can’t use platforms to study society in a purely instrumental way, because platforms are society - and society is platforms.

I think that platformization is one of the most important tendencies of the last decades, so it brings intrinsic motivation for its study. And now indeed I am interested more in how platforms’ algorithms might influence society, rather than how we can repurpose platforms’ algorithms to collect juicy data. You could say that we entered a new generation of studies based on social media data - one that cannot ignore the materiality and politics of the platforms.

Rossetti: I approached my research topic coming from two different positions. From a theoretical perspective, I have been interested in how power is exerted and challenged through media, especially in political documentaries. On the other side, I was involved in the activism around the organization of food-delivery riders. During the research master’s program in Media Studies at the University of Amsterdam, I was encouraged to follow courses from different disciplines. And in a few months, I came to realize quite naturally that those two perspectives were more connected than I thought. I understood that the political practice had an academic relevance and I found myself with the urgency to try to better understand the phenomenon of platformization in its broader and totalizing development.

How has the study of platforms changed over the last decade?

Rossetti: To a certain extent platforms ten years ago were something quite different than the new generation of platforms. After the 2008 crisis, platforms presented themselves as

emancipatory tools that could solve societal issues disregarding profits. It was what we naively called the sharing economy. Uber, at the time, was a carpooling app that required users to pay little to no fee. Airbnb looked much more like Couchsurfing. But the heavy injections of venture capital should have been a signal for future developments.

In the last years, society has moved from the initial techno-utopianism toward a more realistic understanding of the ideological and economic underpinnings of platforms. Platforms have become much more rapacious, or at least they have been more obvious about it. Platforms have changed and so has the study of platforms. The field has become much more prominent and has expanded. Its initial focuses were mostly social networks and search engines, but as these platforms have grown larger – creating ecosystems and incorporating the quasi-totality of social, political, and technical activities – the study of platforms has developed connections with other disciplines, creating a growing multidisciplinary understanding of platformization.

Beraldo: I would say that it changed from platforms being perceived as tools to platforms being perceived more as actors. Before, they were seen as tools, not just by researchers, but also by activists: during the Arab Spring or the Occupy protests, many, even anti-capitalist activists, would truly believe that Twitter and Facebook were empowering people. Castells' idea of the power of "mass-self communication", or Rheingold's idea of the "smart mob", inspired a whole new generation of activists. You also had people like Morozov, very skeptical towards these imaginaries of empowerment. Besides those, there were several skeptical activists - especially the older generation of media activists, those who were used to having the infrastructure in their hands, rather than relying on third-party corporate services: they already knew that the "platform revolution" idea was in large part a false hope.

Many, myself included, really believed in it, falling into some kind of technological determinism: the logic and the imagined affordances of the medium seemed way more relevant than the ownership structure and business model. Metaphors of horizontality were hiding the material structure - not a very Marxist thing. It is not a completely wrong idea, I would say - and activists are and were in many cases also critical, while trying to hijack the potential of platforms. But I think many (and, again, myself as well) got a bit too high on network society ideology. Today, after disillusion as well as revelations about surveillance and manipulation, there is more awareness: platforms are not only tools, but also and especially actors with interests and strategies. We became dependent on them as we rely on them more and more without noticing - we are enveloped, "eaten up" if you wish.

There seems to be a foundational paradox of digital environments: are the means of empowerment at the same time those of manipulation?

Beraldo: Marx always knew that, right? The factory was the means of exploitation of the working class, but also the condition for the emergence of a collective identity, by making workers aware of each other's condition. I guess these types of paradoxes are more the rule than the exception. Think about the impact of platforms on identity dynamics. Ten years ago, the idea was that social media were connecting people; now, that social media is pulling people apart. The academic discourse has moved from being overly interested in Twitter

revolutions and “connective action” to seeing filter bubbles and hate speech everywhere. Sure, this is also due to underlying empirical transformations, especially cultural ones - such as the rise in popularity of the so-called “alt-right”, or different attitudes towards data collection prompted by various scandals. But I think it’s also a matter of shifts in academic and public opinion discourses, and in trending topics that have some kind of self-reinforcing logic.

Rossetti: I agree. We have come to this awareness through specific scandals that have catalyzed the attention of public opinion and have contributed to making society much more receptive to the more threatening aspects of digital technologies. Events like the Snowden revelations and the Cambridge Analytica scandal have exposed the risks of these environments, while lighting the spark for the development of other tools and modalities that empower the user. These events form part of a continuous cycle of deterritorialization and reterritorialization of technology that, in turn, are followed by the appearance of both alternatives and new forms of exploitation and manipulation.

We could be speaking for quite a while about this. Cambridge Analytica has been a turning point. It is the ultimate fragmentation of the public sphere. But earlier you mentioned Castells, and his idea of the network is still very important for platforms; but there is an exploitation of the network logic.

Beraldo: Castells recognized that the notion of network doesn’t imply horizontality, so it can be used to look at very different things. However, I think it created a lot of confusion. You have network as in network analysis; you have network as in Castells; you have network as in social network platforms; you have network as in actor-network theory - and people sometimes tend to conflate them, or are tempted to treat all these different meanings together. The network can be a specific, historical form of organization, as in Castells, or a specific lens to look at anything, as in Latour. The medieval power configuration was also a network of loyalty, and quite a complex one - more horizontal than the modern state in many aspects. This equivalence of the idea of network with that of horizontality has created a lot of confusion, though - nobody would say that the medieval organization of society was a horizontal structure.

Once I was reviewing a paper, and the authors classified Facebook as a peer-to-peer medium. Anyone slightly interested in infrastructural matters would say that a peer-to-peer medium is quite the opposite of Facebook, which is very centralized: Facebook is a huge, single node where all data goes. This of course relates to the rediscovery of the infrastructure - we cannot assume that the topology of the network depends on one layer: the users. Only looking at the user level is the foundation of the ideology of platforms: that we should not care about what happens beyond the interface, because we might not like it.

Do you think that platformization is going to last?

Rossetti: Platformization is such a totalizing and global tendency that I find it very difficult to imagine it could end anytime soon. It might change in different local contexts: in Europe, for example, there is a growing push toward policy-making; but this is often undermined by the lobbying efforts of platforms themselves. Reworking Mark Fisher, I see through the

lens of platform realism, where it is easier to imagine the end of the world than the end of platformization. I really don't see it ceasing very soon. If it does, I would be afraid of the next step then.

Beraldo: I don't know, for the way that platforms are designed and strategically oriented, I am tempted to say that platformization cannot fall all of a sudden. I would not see a strong incentive; it would be chaos. At the same time, it is also a matter of imaginaries, because until five years ago I could not imagine a future without Facebook. Actually, the brief history of digital platforms shows that they change quite a lot, they rise and fall at a surprising pace - every two years there is a new platform that becomes the rising star. How quickly Facebook replaced MySpace and MSN, and was then replaced by Instagram, and then replaced by TikTok?

Platformization is always there, but platforms do not seem to last so much - or at least they change in their significance. It's interesting to notice how it is a generational thing - just like teenagers would not go to the same bar their older siblings or parents or grandparents go, TikTok is now for the younger, Instagram is in-between, and Facebook is slowly being populated by older generations.

Boomers?

Beraldo: Yeah. Instagram is also becoming for older people now, apparently - that makes me feel old. I remember my confusion when, some years ago, someone I met at a party asked to exchange Instagram contacts instead of Facebook contact - I was like, "uh, now you use Instagram to keep in touch with people you meet?". I only used it to post pictures, while for me Facebook was "the" messenger platform. So there is this succession, this reshuffling of what the platform of the moment is, and what you use to interact with your friends. From a generational perspective that makes me think: maybe the process itself is not so irreversible; but on the other hand, it also makes me think that platformization as such will last, because it can reinvent itself and find new ways to enable new forms of creativity and capture new data for monetization. Anyway, I don't think it is sustainable in the long term, when we hit the ecological dimension. But then the question might be: will the planet outlast platform capitalism?

Rossetti: I totally agree. Indeed, the micro-history of platformization is scattered with platform casualties, platforms that arose as stars but didn't pass the test of time. But now we see platform conglomerates like GAFAM and BATX² that have reached an unimaginable financial scale. They acquire the new "rising platform" and just inglobate it into their ecosystem. This dynamic, together with the expansion of their material infrastructures, has situated these companies on a planetary scale from which they cannot evade the global ecological discussion.

2 These acronyms refer to the biggest tech firms: Google, Apple, Facebook, Amazon, Microsoft (GAFAM) and Baidu, Alibaba, Tencent, Xiaomi (BATX).

The issues of global warming and biodiversity loss have many things in common with that of platformization, to the point where you cannot separate the two. They are both total social facts - or hyperobjects, to use a more recent vocabulary.

Rossetti: Precisely. We see this issue very clearly in how platforms try to push the rhetoric of greenness, reframing themselves from problem to solution. We constantly get extraordinary promises of carbon neutrality that are just greenwashing claims supported by carbon offsets. These commitments based on carbon equivalences have been proven to be insufficient at least, if not even counter-productive. Meanwhile, the same tycoons sell us space travels and interplanetary futures.

Speaking about futures...What would be your futurable imaginary of platformization? What interventions shall be taken and at what level?

Beraldo: It all depends on the degree of utopianism that you allow me to adopt in the answer. The main issue at stake, an issue involving imaginaries and interventions, is that platforms have a responsibility toward the public, precisely because they inglobate us all, and within their current ownership structure and legal framework they are not accountable enough. In theory, accountability could be achieved through regulation within the current limit of compatibility of the system, but only to a certain extent. Private property and freedom of enterprise is the ultimate boundary against which regulation cannot go without some kind of system change.

However, the idea that public services need to be in control of the public is a socio-democratic idea, not a communist one. And in many senses, platforms resemble public services: because we are made to rely on them, more and more, through this “inglobation” we were talking about - they allow us to do certain things, but then we are dependent on them; and due to network effects they generally operate as monopolies or quasi-monopolies, so the ideology of the free market crumbles here. Since they work as public services, but are really private corporations, to be socio-democratic about platforms means going against the more basic principles of private property. I remember a couple of years ago there was an article by *The Guardian* that was advocating, not sure how provocatively or not, that Facebook and Google should be nationalized. But again: not sure if the nation-state is the ideal scale, even though perhaps the more realistic one?

Futurability is also a matter of power, not only of imaginaries. And although super-national or urban-level interventions seem better equipped in terms of scale (because lives today are either local or global, way less “national”), they generally lack the power to intervene in radical terms on domains, such as in the structure of ownership and the business model. Also, I think that the term platform is too abstract and generic for this type of reflection. So far I have been mostly thinking about things like Meta/Facebook, Google, TikTok, private platforms in the “front business” of leisure and entertainment. But of course, there are also non-private platforms promoted to manage and control other aspects of our lives, and those are already promoted by public actors.

Rossetti: It is true that platformization is a process that transcends the private sector, but my imaginary regarding the future of platformization is mostly circumscribed to the implementation of alternative models of ownership. And in this sense, I think the tension of scale that Davide was mentioning is crucial. Platforms are feasible and effective on a larger scale. However, cooperative modes of ownership tend to become more complicated as the scale grows bigger. In this sense, I am skeptical of approaches that tend to valorize the cooperatives that reach proportions comparable to traditional corporate groups.

Whereas I find Trebor Scholz's platform cooperativism a valid proposition, I think it fails to recognize how cooperatives like Mondragon Corporation restore dynamics similar to one of conventional business organizations, especially between worker-owners and common workers. That is why I believe the best realistic configuration would be a common framework to be repurposed and tailored in the local context to support the needs and the peculiarities of each situation. In practical terms, this would mean having a lot of different platforms that would be partially interoperable because they would be based on the same infrastructure developed on a national or transnational level. Concretely, I would imagine it being developed on a European level in order to leverage the costs while maintaining the public configuration usually expected for critical infrastructures.

The usual counter-argument is that this might work in a place like Europe, where there is some kind of protection of fundamental rights, but it might be very dangerous in autocratic regimes. There is also a different relation between technology and politics.

Beraldo: Sure. This also relates to the limitation I highlighted before: it is difficult to talk about platformization in the abstract, and different contexts reveal different problems and different solutions. When discussing platforms I more often tend to think about Silicon Valley-style data colonization of life, which is a biased perspective based on my personal experience. Of course, the problems of platformization in political systems based on strong state control are different from the problems of platformization in political systems based on strong corporate control.

Rossetti: I think it is more a matter of which values are prioritized. For example, in Europe we see a dogged defense of private property. As a result, several European states ban websites like Library Genesis or Sci-Hub and punish the streaming or the peer-to-peer sharing of copyrighted material.

Do you think that platforms could be mandated to set up the affordances they create according to legal rules?

Beraldo: Your question makes me think about the relation between the state and the platform as an organizational form in general. In a sense, the state has always functioned as a platform, and this always involved some forms of planning. The market is an institution with material and infrastructural preconditions – aside from the dreams of neoliberal microeconomics – and this, historically, required the state be built upon. Therefore, the state has been a platform for the development of markets. States created legal conditions for markets to operate, as well as the material conditions for goods to be transported. Providing infrastructures by investing

resources, putting together certain kinds of actors, enabling certain kinds of behavior, while pretending in an ideological manner not to be playing an active role: to me this sounds similar to what platforms do today.

As for your question more specifically, I guess that the state could or should provide such a legal framework. But the real challenge is that platforms seem to be organizational forms that evolved to evade and frustrate such attempts at pre-regulation- by blurring boundaries between legal categories, by making processes opaque by-design, by strategically adapting to local conditions. So this could maybe work with a very different idea of platforms?

Rossetti: To a certain extent affordances are pre-regulation in themselves, since they determine the universe of possibilities in a certain environment. The choice to afford or not to afford something is always political and produces a discursive way of regulation. To complicate things, platforms' architectures make it extremely easy to adjust and modify their settings at an incredible pace also through A/B testing³. Personally, I am not entirely sure about the ability of the legal system to keep up with the speed of platforms' constant mutation. On the other hand, it is also worth noticing that platforms' affordances are often creatively reinterpreted and repurposed by users to conform to their own needs.

However, there have been examples of successful legal interventions to mandate certain affordances. Getting back to the issue of copyright that I was mentioning previously, states have imposed directives on platforms to collect particular data in order to automatically censor copyrighted content. This is happening by mandating against this kind of data collection. This can be programmed. For instance, the copyright directive pressures platforms to censor certain kinds of content automatically, so in this sense it mandates how to set up the affordances.

Are these platforms subject to acts of reappropriation?

Beraldo: I think there is always space for reappropriation, contestation, hijacking, hacking. But also in reverse, for cooptation, manipulation, and hegemony. Hall's idea of subversive decoding and encoding is not only valid for media content, but also for media affordances. Affordances can be imagined and subverted, to a certain extent of course. This creates space for resistance from below, but this also means - connecting to the previous question - that it is very difficult to pre-regulate platform affordances and their consequences, because they are fundamentally unpredictable. Platforms create new domains of life, a lot of things that cannot be anticipated; and regulators require stability, and they struggle to continuously catch up.

You can't even start to imagine what kind of affordances will be generated by platforms thirty years from now, hence what kind of challenges to norms and values they will pose. This makes it difficult to state "these are the values that platforms have to obey, and so have

3 A/B testing is a user experience research methodology. It is employed to compare two (or more) versions of something within two (or more) sample groups and to determine which performs better.

to be forever.” I am not sure how factual this anecdote is, but I remember reading how the Khmer Rouge in Cambodia forbid the production and use of cooking pots below a certain diameter and size. The idea was to inscribe collectivism into the most mundane artifacts: you cook for the community, not for yourself. The affordance of these tools dictated a certain normative attitude towards cooking and eating. This hidden affordance of pots has been there since forever, and a regime interested in fostering extreme collectivism can leverage such a simple technical feature for its goals. Platforms generate very new and unpredictable situations, where affordances can promote one or another value or attitude.

In this sense, the question for me is: which mechanisms should be created to set up the platform affordances?

Beraldo: The internet started based on protocols that try to inscribe certain values, such as horizontality and open accessibility. In some 15 years, it went the other way around: everything is centralized, access is tightly controlled, you have to pay for certain services and the free alternatives are pushed out of the picture. The internet pioneers tried to build values within the infrastructure, but that infrastructure has been reappropriated for completely different values. This makes me ask: What defines something as a public good, its materiality or its legal status?

A public good is a good that does not imply rivalry in its consumption and that can be accessed by all. Usually, air is used as the ideal-typical example of a public good. But if we were to tax air consumption, and lock people out of access to air if they don't pay their monthly iBreathe subscription, air would not be a public good anymore. The status of a good as public is a matter of affordances - for now we can freely breathe air because of its material properties. But it's not just a matter of its intrinsic affordances: if a certain regulatory framework would define it as such, then a certain good would become a private good. Napster songs became a public good, materially speaking, but then some spoiled billionaire musicians and a new generation of music platforms re-instated privateness and price tags of some kind on it. So what makes a good a public good, its affordances or its legal context? This is to say that yes, affordances bring certain values with them that challenge regulation, but the other way around is also true. So where does the affordance end and where does the value start?

Rossetti: When you mentioned how the internet was created, I think it was also interesting that you were questioning the fact that it is the state that has to set up all the norms and set up a system in which a very different geography of actors was deciding what was going on. But this logic has been appropriated by commercial actors and states. Nonetheless, there are interesting alternatives to the premises of these centralized powers: for example, here I think of figures like Linus Torvalds, the “benevolent dictator” of Linux, whose centralized authority serves the purpose of coordinating horizontal and disseminated labor. In this sense, I believe that, in order to question the process of implementation of certain affordances, it is crucial to first address the power hierarchies within the system and the distribution of responsibilities among users. In other words, it is important to first discuss the process through which affordances are devised.

To which extent is the design of the infrastructure a constitutional issue?

Rossetti: The design of infrastructures is surely one of the most relevant areas to legislate upon nowadays, so possibly also constitutionally. It is a matter of relevance to the public, and this has also to do with the special link that historically related infrastructures and the state; a link that has been corroded by neoliberal reforms. Jean-Christophe Plantin and colleagues have noticed the growing compenetration between the platforms and infrastructure itself – what they called the platformization of infrastructure and the infrastructuralization of platforms.

This tendency contributes to supplanting the modern infrastructural ideal, the belief – originated in the middle of the 19th century – that it was the state or the city that had to provide citizens with a certain basic infrastructure. Today, we see the extremization of the neoliberal privatizations initiated with the deregulation of the '80s: the internet infrastructures, as the critical infrastructures in general, are increasingly built and operated by the private sector and often by the platforms themselves.

The design of the infrastructure is surely a constitutional issue, but it is also an expression of the ideal of the institution that produces it. A public institution is expected to build an infrastructure that spreads evenly, whereas a profit-driven company will necessarily produce an infrastructure mostly developed in the economical centers. It is essential to reclaim the publicness of infrastructures because they cannot be left to develop according to the logic of the market, fragmenting societies and increasing inequalities.

Beraldo: For me this is a crucial point. When I was a kid I was spending the summer in my mother's little home village in the middle of the mountains. Some households did not even have telephone landlines - people would go to the bar for that. I remember my frustration when hearing from friends coming from Milan that they just got access to fiber-optic Internet, and I, living in a mid-sized town just outside Milan's metropolitan area, was stuck another year with 56K, taking 2 days to download a Green Day MP3. I'm afraid those living in that village are still waiting for fast Internet.

Getting back to the issue: what counts for infrastructure counts for platforms, precisely because of this interpenetration that you are mentioning. We have to find ways to re-instantiate the preeminence of the public interest in infrastructure, in platforms, and in the infrastructure of platforms. This has to pass from the level of design. I am not able to assess whether we need a change in the constitution, a new law, a revolution, or a new technology for this to happen. Let's see if a new generation of "public-by-design" platforms will be able to reach the critical mass related to generating network effects and thus value for the end user. In the meanwhile, we should try to resist the complete subsumption of our lives, and try to hijack existing platforms where we can, without forgetting what they are behind the screen.

According to its etymology, the word responsibility can mean both accountability and care. Can we think of an infrastructure that enables care relations?

Beraldo: Platforms can do great things - personally, I do not subscribe to a hyper-pessimistic vision of our current socio-technological configuration. This idea of “care” can also be a double-edged sword: what kind of care? At what levels? The state taking care of its citizens can range from welfare to Stalinism. Of course, it all boils down to what you consider care. Platforms are enabling care to many extents, but the main driver is always profit and this, in the long run, goes against the idea of relations of care. Platforms subscribing to the early idea of the “sharing economy” are good examples of at least “wannabe” platforms of care - sharing is caring, right?

Something like Couchsurfing could be considered a platform of care - because when it was created, it allowed hosting and being hosted all over the world for free and in safety; plus it often created sociality between hosts and guests, as well as the participation in a community in every major city in the world. That was the real mission of the platform. But then you see what happens to these platforms: they are engulfed by other logics. This also happened to Couchsurfing I think - now it's subscription-based; not sure what is the exact business model there, but I personally experienced how it stopped working the way it used to. People prefer Airbnb, even though you have to pay and you don't get to hang out with the people that host you.

Rossetti: The examples you make are very interesting and make me rethink what I just said. I refer to how platforms could be framed as “platforms of care” regardless of their infrastructures being collaborative and their code open source. Indeed, Couchsurfing and BlaBlaCar were something completely different. Airbnb and Uber also were different in their initial stage, before becoming the ruthless siblings that made it on Wall Street. But if it is true that their financial flows suggested how they would develop into profit-driven enterprises it does not mean that they could have been something different. Couchsurfing and BlaBlaCar could have remained free services by relying on donations, like Wikipedia. Another donation-based example worth mentioning – not properly a platform, though – would be Signal. With the risk of sounding too conventional, the aspect of caring could be mostly tied to the platform being profit-driven or not.

Etymologically, an institution is something that stays; in this sense, a platform as an institution is somewhat of a paradox, because one of its characteristics is constant change. Are platforms new kinds of institutions?

Beraldo: It might be a matter of degrees of abstractions. We could speculate that platforms hacked institutional logic by making structural change their most stable feature, by turning the delusion of expectations into a meta-expectation. I can see how we could go Luhmannian about this - maybe we should write a paper about it.

Rossetti: I very much like this idea that platforms' most stable feature is their instability. They are for sure new kinds of institutions: even if they change their forms, we can be sure that

they will not change in their substance, while continuously eroding the role of traditional institutions like states to create their own markets, identities, environments, and knowledge.

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Fig. 6: Platform as Marketplace

THE NEW EPISTEMOLOGIES OF PLATFORM URBANISM

INTERVIEW WITH LETIZIA CHIAPPINI

Letizia Chiappini is an urban sociologist. She has been working on the concept of the 'urban platform' with fieldwork in Milan and Amsterdam, in an attempt to theorize the relationship between digital platforms and the urban realm, touching upon hyped phenomena such as the 'sharing economy' and 'maker movement'. She is currently a lecturer of Creative Business at the University of Applied Science in Utrecht and the co-founder of the collective Slutty Urbanism. I met her for the first time for the interview - which took place in her stylish apartment located in front of Westerpark - and she quickly became an important part of the Dutch-Italian connection of this book. In the interview, we discuss the relationship between platformization and cities, and how urban studies are coming up with notions such as 'platform urbanism' in order to overcome the smart city discourse. Her two cats, Mina and Merlino, actively collaborated to the interview.

Could you provide a definition of the platform? Which metaphor would you use to describe it?

The definition of platform for me goes with a sort of remediation. It is a place in which you can interact, there is a community behind it. There are certain core components: community, user, interactivity, and resources exchanged on the platform. Resources can be tangible and intangible: for instance, a 'like' or a review about an item or a seller are intangible resources, and a drill is a tangible one. One of the commercial digital platforms that I have in mind is Airbnb. Considering those characteristics, Airbnb is an example of a "community marketplace," as Filippo Celata defines it. It is by definition Peer-to-Peer, tracing a sort of *continuum* from the open-source-community to the Silicon Valley ideology.

The word 'platform' is very interesting because there are two *façades*: on one side the commercial, but on the other side, we have a bulk of values that were behind the commercialization of it. For instance, Couchsurfing is less prominent now. The bulk of values behind platforms are not solely commercial, but they are still close to the commons-based peer production that was also popular with Michelle Bauwens's work. Alvin Toffler's concept of the *prosumer* is at the core: users access the platform with their profile – a real name or a pseudonym – and they can be producers and consumers at the same time. They can be the one publicizing an accommodation or simultaneously the guest. One can also be a spectator, a voyeur. In the differentiation of roles, if I think about my daily use of Instagram, I can be definitely a voyeur of certain users' pages. There is a collective voyeurism happening there!

I am still in the Peer-to-Peer Facebook group. But it is a form of voyeurism in which everybody is aware that everybody is a voyeur.

Yeah, there are very interesting overlapping between private and public, open and closed, access and capital, bottom-up and top-down. It always happens in this very blurred and hybridized form. As for the metaphor, I was quite influenced by *The Stack*, which is definitively tridimensional. It's the double dimension of the grid plus what goes on it. It can be users, but it can also be a city. In the case of Airbnb, there is the accommodation, the neighbourhood, the price, the amenities, who has been there and wrote about it. What I can try and describe is: how much can a platform hold? It can also be capital; you can put an asset on it. When I was at Biennale, the title of the panel was *The Platform is my Boyfriend*. It can take care of me in a very patriarchal way, it is not your best friend, it is my best friend and my boyfriend! The way the platform cares about you is very opportunistic.

When we talk about care, I find it interesting that it derives etymologically from the word responsibility. Do you think we can create platforms that enable care relations?

I first think about the slogan promoted within the sharing economy ideology. The slogan was "sharing is caring." Indeed, it is, because when there is the withdrawal of the local state - and maybe in the USA it's more prominent - Airbnb will take care of the community. The idea behind Airbnb was also that it would create its own community of welfare. For me this is scary. I see the social aspects of responsibility are turned into user identity, and fed into these big players. The state is not a regulator for this accountability. The trust that you give as a regular user on the platform is to the platform *per se*. If some problems occur in accommodation on Airbnb, the only solution offered by the platform is the chatbot and our digital labor. It is more work and more time-consuming for the user.

For Hardt, Negri and Christian Fuchs, digital labor is part of the societal deal. Both social media and digital platforms are expressions of the changing time *régimes* that modern society has been undergoing, especially in relation to the blurring of leisure and labor time, and production and consumption time. Moreover, if we need customer support or help, our time is used (and wasted) writing to chatbots or emails.

This last aspect is strictly connected to questions regarding who works for platforms and how many workers they have. The answer can be: very few. Airbnb has a bunch of offices around the world, but then they were outsourcing in Barcelona for customer service. There is also room for discussion about responsibility, the response, they are accountable in a way, but we need to dig into that, I think that they are very cunning in doing that. But also, I know I am limited when I talk about platforms, because I focus only on Europe and a Westernized frame. In other contexts – Global South, China – there are even other dynamics that are not under my radar.

What motivates you to study platforms?

My first motivation, when I started the Ph.D., was to study the "good side" of technology. I have been always personally involved in collectives and movements that advocate for human rights and against capitalist forces. Airbnb and Uber are the quintessential manifestations of capitalist forces, but under different guises. There are makers who use technology for social

and civic purposes, such as the tokenization process, local currencies. These tools that are encompassing platforms. This was more from an activist perspective: I am an academic, but I can also provide alternative views; the critique can also inform about alternative patterns. It is not a very academic critique, it is not about critique *per se*, but we have to understand our use of platforms, in a sort of self-ethnography. I am not giving my behavioral consolation away from these platforms, but we need to understand how we can transform them in a more useful way, less corporate and neoliberal. Now it's still ongoing in this sense, but I am also trying to disrupt the current critique. For instance, our side project, *Slutty Urbanism*, tries to argue that "we are slutty in our choices." I don't use Amazon, but it is difficult to get rid of platforms. How can we be slutty in our choices, and then reverse the very dreadful side of it? These kinds of questions are still on my motivational side.

What do you think has changed since the moment you started doing platform research?

It changed in terms of the production of concepts and notions, from a hermeneutic point of view. This new research field named "platform urbanism" is quite heuristic – before that, there was the smart city discourse that was highly misleading - not only to observe different epistemologies but also to include complementary and minor theories around it. The tendency of platform urbanism is not solely to criticize Airbnb, but to explore the margins and the interfaces which co-constitute the space and ultimately the relationship between digital platforms and the city. In Agnieszka Leszczynski's work, platform-urban configurations are means visibly open to negotiations, reconfigurations, and diffractions through tactical maneuvers. Those maneuvers are embedded in the everyday digital practices of urban inhabitants.

Do you think that platformization is going to last?

I think it will. The temporality issue is always a bit tricky. In relation to urban studies, there is the media studies lens to take into account, and then there is the old school of urban scholars. The attempt of creating a new epistemology between the two disciplines is now advocated. If we call it platformization, then we go on. It is not only about digital platforms and the city. Urban studies is an archipelago of this planning, geography and sociology articulation. When I was reading this new chapter from Scott and Rogers – who are part of the scholars who coined the term "platform urbanism" – about urban media studies, the attention was put on the methods which allow for the study of this transformation. It was more about the methods we can use as scholars. If I use Facebook to study a certain project or initiative, how can I use this material? Is it an ethnography? The discussion is very interesting, it tries to merge the two things together in a ground-breaking way.

Platformization became an insightful lens to see social changes because it encompassed both the discussion about computation and the value of a more human-centric approach. In my research, I first conceive the *urban* both as a physical and political space, that provides the context for a specific set of socio-spatialized practices. Then there is the *digital*, which is the interface between the logic of computational algorithms and human behavior (i.e. citizens' responses to particular issues and causes). Hence, it is not only about quantifying

how many users there are - especially if we look at smaller platforms like civic crowdfunding, you don't need computational tools. I believe that the futurability of platforms is foremost about qualitative techniques and (digital) ethnographic material.

But using the tools we are researching makes us biased. The analysis is even more driven by a political agenda, on how you want to improve your own life and the world.

This depends on the fact that we are constantly moving with our object. Thomas Poell and José Van Dijck noted that is so difficult to deal with a mobile target. Affordances in platforms are constantly changing, and we have to follow them.

This pattern pops up at another level if you think about the etymology of the word institution and the fact that platforms turned into institutions of society. You have a contradiction in the institutionalization of platforms: how can an institution be always-changing, and even accelerating?

This is a very interesting question. Institutions are a manifestation of sedentary communities. In James C. Scott's latest book *Against the Grain*, he puts it as follows: what staggering price our ancestors paid for civilization and political order? Why did humans abandon hunting and gathering for sedentary communities dependent on livestock and cereal grains, and governed by precursors of today's states? The majority of people think that human settlement and the development of agricultural villages, towns, and states were made possible by the domestication of plants and animals. This allowed for the development of civilization, law, public order, and a presumably secure way of life. But he also talks about the barbarians who long eluded state authority to comprehend the ongoing conflict between governments and non-subject people. But archaeological and historical evidence challenges this narrative.

The first agrarian states, says Scott, were born of accumulations of domestications: first fire, then plants, livestock, subjects of the state, captives, and finally women in the patriarchal family - all of which can be viewed as a way of gaining control over reproduction. Can digital platforms become institutions or are they the new barbarian? But of course, we see differences based on diverse institutional contexts and welfare regimes, like how Deliveroo works differently in cities like Amsterdam and Paris.

According to what I call the 'cybernetic branch' platformization changed the nature of political planning. For Bratton, contemporary platforms rely on generative mechanisms that tame emergence through real-time computation. Do you agree?

Yes, on a fundamental level. I have been thinking about centralization vs decentralization within different governance arrangements. Platformization processes have the potential to fundamentally recalibrate the modalities of interactions between the different actors engaged and impact the decision-making of executive powers and/or the discourses on the physical space of the city in question. The paper by Törnberg and Uitermarkt, *Complex Control and the Governmentality of Digital Platforms*, elucidates perfectly how social technology represents a centralization of social interaction modalities, providing private institutions the authority to

influence and alter our very communication patterns, and at the same time how governance is decentralized in terms of decision-making and gatekeeping. Also, there are platform cooperatives, like Green Taxi which exists as an alternative to Uber. The principle of the cooperative applies to them, but it is not enough to fight the powerful players. We still need a trade union; we need something supporting the structure when it goes to planning.

So do you see the platform as a governance mechanism in the city?

I will stick to the case of civic crowdfunding platforms: about a decade ago government agencies started to assume a significant role as facilitators and curators of campaigns to support local projects, particularly in the sectors where they found their networks of deliverance and assessments limited. In Italy, Milan has been one of the first cities to adopt civic crowdfunding as a policy tool. The councilors for economic and social policies of the Democratic Party launched *Crowdfunding Civico*. The political motives behind the call for civic crowdfunding were in line with the *Milano Smart City* agenda, which wanted to encourage the adoption of a smart city governance model to foster the social economy in the city.

To come back to your question: the idea of governance itself, yes, there is a kind of way of regulating for the civic crowdfunding, some projects are accepted, some are not. What I found out, is that the people that benefit are the people that are already known in the local arena. So, the governance depends on which platform we look at. Here, for me, “govern” and “governance” are different. The governing is power, and usually top-down. The governance should be an arena in which all the stakeholders have the same voice and power of exit in the decision-making phase.

To be more precise, we can say algorithmic governmentality.

This is also something that I found in planning, what they say about platforms is that they are “collaborative governance”, like the smart city! Which city wants to be labeled as stupid? It is tautological, because governance is of course collaborative. Elsewhere, cybernetics reminds me so much of Mechanical Turk, how we inform platforms. If we think about actants, all the other entities that are not humans but more machinery parts, we become part of the machinery when we order on Uber, we are informing Uber to substitute riders with something else. We are giving up information. It is crazy, when I interviewed Uber riders, they told me they can save all their data because Uber Eats uses Google maps. Once, one rider told me that if they have serial killer tendencies, they can kill someone, since they have records of where the users live. It is about affordances. The affordance is very much what digital platforms do in a way. Another example on Instagram is the shopping button that has been moved from a very remote place in the screen and now pops up bigger in the middle of our smartphones or browsers.

What is your futurable imaginary of platformization?

My speculations would be on counter-movements that are able to create awareness. The awareness is a sort of a glitch. For instance, when one orders on the app, the user has a

banner in the screen that pops up and says: ‘you are also contributing to underpaid labor’ This allows a kind of awareness of the consumer toward what’s behind the product. I want to speculate about the awareness of citizens, of users, counter-actions - not merely “Keep Calm and Leave Facebook”. Quitting digital platforms must not be the only answer. It is more about taking further accountability on the side of policy-making. Amsterdam’s ban of Airbnb in the canal belt is a good example of regulation by the local state apparatus. But it is certainly not enough to tame a unicorn like Airbnb. Meanwhile, in Milan, for the 2026 winter Olympic games, they partnered with Airbnb.

This imaginary, however, cannot be actualized because of the incapacity to mobilize and the scale of this mobilization. I like when David Harvey said that “the urban is the front”. When riders mobilize, they start in cities. Here the problem of scale would emerge: how can we fight the big players? Riders are a really good case, they don’t know each other, they log in on the platform through WhatsApp... I watched this documentary called *The Gig Is On*, and it was so cool to see how we can use software to avoid tracking by the app – because otherwise, the app asks you to perform in a Stakhanovist way. Other examples I can think about are Mechanical Turk workers.

In fact, when you click buy on Amazon you click on a remote control that asks a person in a bunker to perform an action. And in a curious case, some riders started a protest by ordering a pizza in a square and asked other riders to strike with them.

We did not mention the pandemic, but it was a very big deal for platforms. Gorillaz, the new grocery platform, and Flink. I am also interested in the colors they use: one is black, with cargo bikes, the other is pink. In one period I could not go out and I ordered with Gorillaz, and since then I constantly receive pop-up notifications that I did not allow for: “Why cuing? I will bring it to you!” Platforms are not above us, but they put other pressure on us. I don’t see platforms as another independent entity. We are all part of it.

The side project of *Slutty Urbanism* is trying to propose images less academic and more research-in-action. Talking about it and divulgate it. Not to boycott them, but to understand what we can do for the rights and for the labor. I only have different tactics. One is using these interviews as a way to create knowledge and make it more accessible. When I teach to first-year students, I ask them: what is the popular opinion about what you use? I am surprised to see that they consider Jeff Bezos and Elon Musk as mythological. Then I show them a meme for the unpopular opinion and... tonk! Sometimes, by September, they become too negative, too critical. We talked about Black Mirror, and I said we need a grey mirror - we need something in between. I also believe that one answer to technology is technology itself. The Macao collective in Milan made *Le Gran Jeu*, a board game to explain blockchain. Blockchain is something you understand step by step.

Switching at the etymology of the word map, as in ‘mappa mundi’, we see it refers to the ‘sheet of the world’. How do digital platforms reframe the relationship between the map and the territory?

For me, this brings up cartography, which has been speculated in geography. Cartography can map anything, but it is not the territory. It is the power of representing a territory through a map. Therefore, based on scale, we can cancel archipelagos of islands in our maps. A map is actually something that creates a direct connection with benchmarks in the territory. You can map streets, mobilities, flows, cities, also creating hierarchies amongst them. The map creates a bit of an idiosyncratic reaction, because if I map something I don't map other things. For instance, Google maps things but then needs the human touch to define if it is a restaurant or a Kebab place.

What I do in my research is use tools to map out the locations of crowdfunding projects. From there we can see which areas are dismissed or which areas are prioritized. Surprise: the projects financed are in very hyped, cool and gentrified neighborhoods. The result of my maps is to show the lack of redistribution in the whole city. UvA researcher and Assistant Professor Valentina Carraro conducted research about Jerusalem, which is spilt in two parts. Amazon does not deliver in one part of the city. They have only a post office. If one Googles it, there is nothing mapped. She spent two years there for research and she lived in both sides. As a user, you don't have your parcel and you have to spend two hours cuing to get your parcel. Not really functional!

What you say actually reminds me of what in democratic theory is called agenda setting. We can debate for hours about things that don't matter at all; but who decides the topic of the debate? It seems like a form of mapping.

The mapping of this is very interesting, starting from the idea that visual representations are powerful tools. There is an important website that I always use: Inside Airbnb – scraping data from Airbnb – and it does the opposite of what Airbnb does, it shows in which areas of the city Airbnb is the most threatening; how many private properties have the same owner/account.

This is something that maps can do for the good. Another example is the proposal by Shannon Mattern, professor of anthropology at The New School in New York: *How to Map Nothing*. She affirms that many pandemic maps depict the macro-scale forces that produced the *Great Pause*. What's harder to show are all the under-appreciated actors that are enabling our protected isolation, the pulsing activity powering the pause. Mapping is about undergirding the geographies of suspension where networks are in furious motion, continual overstimulation, and exhaustive exertion.

And I now ask myself, what is not mappable in our cities? For instance, people that were walking just to have some fresh air, nothing for consumption. We are tracked. Sometimes you want to be mapped, because you also localize yourself. We can also map people on Tinder, we can see their locations. I am not a big fan of dating apps, but when I first moved to Amsterdam, I used it and I put a range of ten kilometres. Then I was playing with people that stayed very close to me, so I used to say: "Oh, there is proximity, we should meet!". They lived in the same neighborhood in Oost where I used to live, it's like a hipster vibe, so that is the kind of cultural-cognitive mapping I did with people. In the neighborhood of de Pijp you would map other people and other vibes...

Last etymology: that of public, which also keeps together two meanings. On one side the opposition between ius publicum and ius privatum; on the other, it is the opposite of secret, and it thus means manifest, plain or visible. Are private platforms performing a public role?

When I think about public vs private in platforms, I always think about commodities and services and the access to them. The question is: how does a platform intersect with the distribution and allocation of public goods and private services at an urban scale? What was public before, and is it now privatized or commodified? If I would help my neighbor in doing groceries for free before, now I can do it for five euros on Zap or Gorillas. Civic crowdfunding is another illustrative example of visibility, as civic crowdfunding platforms benefit from the urban as a front to (re) organize citizen-based, mutual-aid initiatives, and solidarity actions. Digital platforms are different in the allocation of common goods and services at an urban scale (via P2P transaction), and oriented towards civic and grassroots initiatives in which the local state agencies have a significant role in steering urban development patterns.

What was public and what was private is now quite hybrid. What I see in civic crowdfunding projects is public-private civic partnership. Or public-public-people partnership. It is literally defined 'PPP'. The storytelling goes like: 'We are a couple of friends that have a project, we can promote it, we go to the Milan municipality and we try to promote our idea. We create this public-private-people partnership, because we also need sponsors, we need the private sector to do that, and we make it visible through the platform. Plus, we need the crowd – namely other similar citizens that like our idea and project. How does it sound?'

Is this also related to the right to the city?

It is related to the false statement that platforms are deterritorialized. Most of the platforms depend on transnational and trans-local networks. Thus, the rights are also very territorialized - if access is a new form of capital, platforms prevent or favor access in an uneven manner. So, yes, it is the claim for something, the digital rights to cities, and how one can protect its own rights. The right to the city is that I need certain public services, like housing or public transport, and if it goes through the platform, it adds an extra layer, it becomes mediated – we did not mention, maybe because it is obvious, that platforms are mediators. They mediate rights and access. It goes in a very paradoxical way, that the public housing system will go on platforms like Funda.

The first wave of smart cities was also on local dashboards, which are not platforms (because there is no user), but then one can click on them to check the energy consumption of our grid, so they are transparent. But transparent of what and for whom? As a user, you only see consumption, consumption data, you don't know what kind of partnerships have been going on before that. There are different layers - maybe I need to articulate them more explicitly - but this transparency and visibility work only 'one way', namely through the right to show that we have been doing collective budgeting in the city, so we show on this local dashboard what we have been collecting for the city and how we allocate resources. It doesn't actually imply citizen agency in the final decision-making process.

To what extent do you think platformization can be framed as a constitutional issue?

I think about the first wave of the internet and the ‘internet bill of rights’, proclaimed by Tim Berners-Lee, the founder of the World Wide Web Foundation, we do not need only protections that assure justice, openness, and human dignity. What we will need is a more ethical consumption and awareness towards digital platforms. If platforms operate at a global scale and the consequences of their negative externalities are at a local scale in terms of labor and commodification tendencies, there should be a global manifesto and new ‘bill of rights’ for platforms. In particular, I think about constitutional aspects of networked society and networks in cities. This reminds me of the legacy of Manuel Castell and the right of internet horizontality. The idea of networks is connected to networks in cities, there is a flourishing of movements. That’s not what happened, not what we see now. The infrastructure creates access and privatization of certain services and rights. In India, the Re-Captcha problem is an issue, and certain kinds of devices are not to the standards of some technologies; and if you want to script data in Brazil you cannot because of the broadband. But also the rights of Internet are so uneven, and the geography is also uneven. The materiality of it is uneven.

Further Readings

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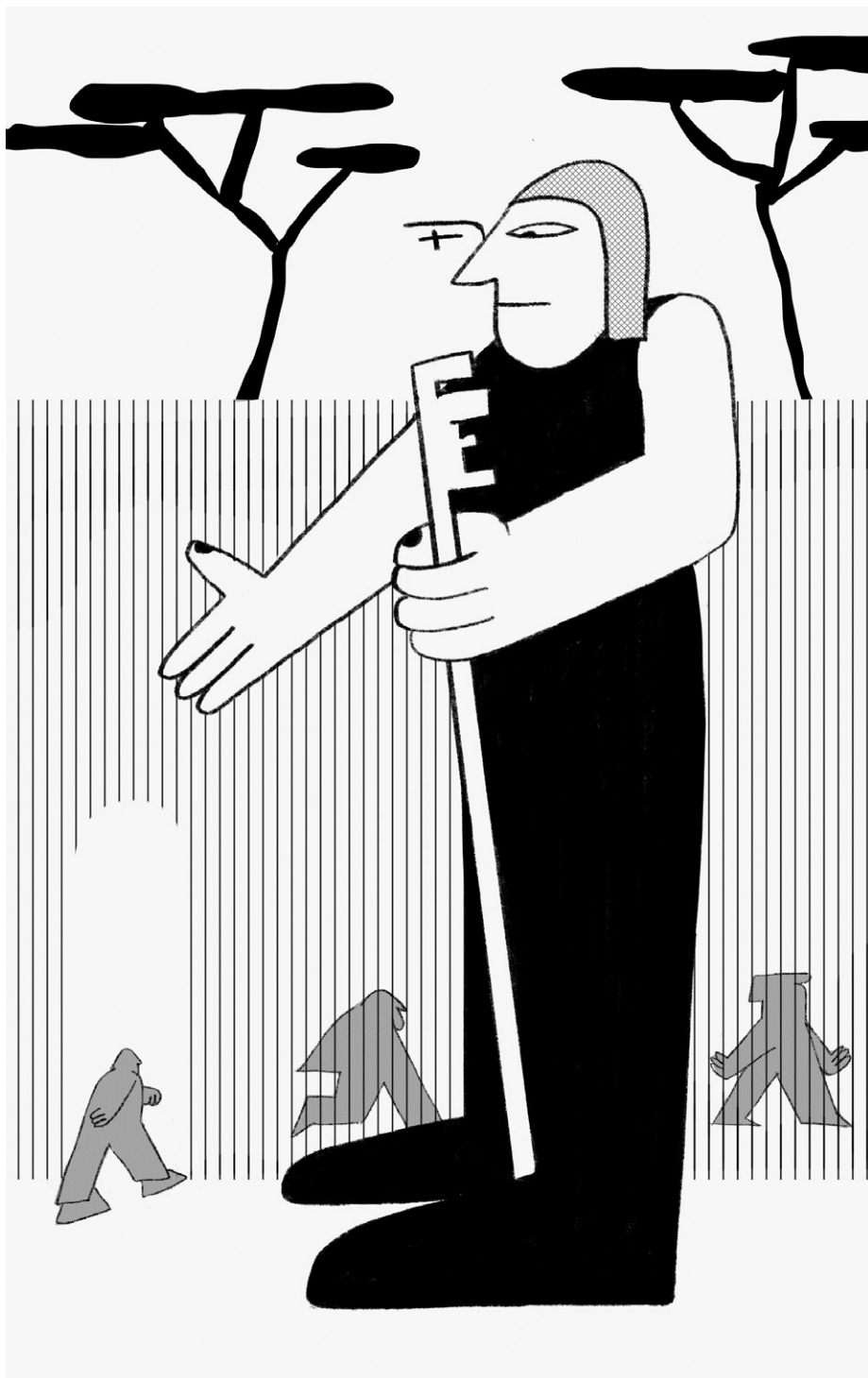


Fig. 7: Platform as Gatekeeper

THE PRODUCTION OF PUBLIC VALUES THROUGH DIGITAL PLATFORMS

INTERVIEW WITH MARTIJN DE WAAL

*Martijn de Waal is a Dutch writer and researcher with an interest in new media and public space, currently working at the Amsterdam University of Applied Sciences. He is active in several projects meant at exploring the relationship between the platform model, the commons and the city: **CoReUs** on the design of Responsive Urban Spaces; **Straatwaarden** (Street Values), focusing on changing practices of heritage-making in public space; **The Hackable City**, a research project on collaborative citymaking in the Network Society; **Circulate** on the design of local platforms for the circular economy. Martijn combines his experiences with an interest in practical philosophy, digital media and urban studies. During the interview, the discussion revolved around the possibility to design different platform models, such as local platform cooperatives, also in order to 'reverse the tragedy of the commons'. As he explains, digital platforms work as rights management systems, and public values can be produced through them. The interview took place at Café Superette, Amsterdam East.*

What do you have in mind when you talk about platforms? Could you provide a definition and a metaphor?

I use two metaphors. The first one is a multi-sided marketplace that is digitally mediated. Different parties offer their services on the platform, the platform organization takes in the demand from potential customers, and connects the two based on some underlying logic. Usually, there are other parties that are interested in the data produced in the interactions. It could be an advertiser; it could be a health company.

The second one is the platform as an enabling infrastructure. So, for instance, an open data platform: it's a bit of a marketplace, but it's more than that, it gives access to a number of resources I could use to build services on top of it. In that case, a platform is an underlying layer or infrastructure on which others can develop services or actions.

If we look at actual platforms, digital platforms-institutions, if you like, here are two kinds again: the first one is the closed black-box, a marketplace I can have access to - like Uber or even Facebook. The second type provides a layer that could be of use in a higher 'stack' of infrastructures, data sources, and interfaces. The platform is a layer somebody else can build their own services on top of. Such stacks can be multi-layered with different platforms building on top of each other. So a platform can be a marketplace that can also have an API, and then somebody else can build another platform on top of that, and if that one has an API someone else could build on that platform, and so on.

Some people also think about cities as platforms. A city is a sort of self-organizing system that brings all kinds of activities, people, and flows together. I can set up a shop here and I am sure that customers will come, because the city's infrastructure and program will 'feed' potential customers past my shop. When you want to explore how cities function and when a city is a good city, then you can use the platform as a metaphor. If you want to write laws about Facebook, then you need another definition of a platform.

How would you see platforms in the future? Can we think about different models?

Of course. You can design them in any kind of way, right? Especially coming from the world of commons, for instance, there's a lot of interest in digital platforms as a tool to manage collective resources collaboratively. So, the platform is basically an expression of the code, which is based on underlying assumptions on how the world should be organized, so it's about those values, not so much about platforms themselves.

In one of our research projects, we think about common-based platforms, even if commons are loosely defined. Some people say 'everything we do together is a common', others have very strict, narrow economic definitions of it. But what defines these groups of entities, these resource communities, is usually a bond of groups of people who live close to each other and have a set of resources they need to manage together. It could be shared housing, there could be like a local energy community, etc. Our research is about what you run into when you want to manage that resource on a platform.

But I think in the previous definition we missed one aspect. We said it's a marketplace, but it's also a rights management system. The rights management system tells me if I am allowed to sell something, to whom and under what conditions. The reputation system comes into that a lot as well: if my ratings fall below a certain number, then you are not allowed on the platform anymore, so I lose my right.

Is this related to the production of trust by the platform?

Yes, but I prefer to frame it as a rights management system. We are working on this idea that we called 'The city as a license', through which we try to understand the city as infrastructures managed through digital platforms based on digital ledgers where all kinds of rights management systems play an important role. So, for instance, I have a GPS in my car, but the routes that show up in that GPS are dependent on real-time data analysis as well as some set of rights or privileges that I or other actors in the system may have. E.g. maybe the system doesn't show streets with schools between four and five in the afternoon. So, you can individualize the rights of people to gain access to certain resources.

That's also part of the research on resource communities. There are a number of decisions each community needs to make. What do you administer on the system and what not? Who has the right to use a collective resource, and under what conditions? How do we manage scarce resources? It can be based on economic principles, such as implementing a dynamic pricing model: pricing goes up if demand spikes. Or do we use the first-come-first-serve

principle? Or do I get access privileges if I do a lot of voluntary work? Would my voluntary work also earn me economic credits I can use, for instance, to use that car without paying, or do I get a different reward?

So it's all these kinds of rules that you have to set up that come as a bit of a surprise for people who have started to organize resource communities: they think they are designing an administrative system, but they are actually designing a governance system.

You have used the example of managing renewable energy resources via a platform, and it seems to me that the hardest part is: how do you take into account trade-offs by design? There are some choices you need to make and you need to balance rights and interests.

In this project, we developed six design dilemma's regarding the design of digital platforms. These are all balancing acts between opposite ends of a spectrum that are both attractive, but you usually can't have both of them at the same time. One of these dilemmas is 'privacy vs. transparency.' Especially in a commons-based system, digital platforms are seen as a way to undercut the tragedy of the commons because you can actually make whatever someone contributes visible. But of course that comes at the price of the privacy of people, because then I can see what your contribution is, and when and where you made it. Is that a good thing or is that a bad thing? The point we are making is that there is not necessarily a right or wrong, it depends on the type of community, on its scale.

Who owns such platforms for resource communities?

It depends, not many exist already as fully operational platforms, because it's a new phenomenon, but there are different possibilities. One could be an open-source software package, or a commercial one, that communities just use and buy; it could also be developed by the community itself, even if this is not very likely because it's costly and you need a lot of expertise. Why bother designing something new all the time? Or it could be developed by the project developers, or the architects. It's kind of interesting that you ask that because I've really never thought of that.

We have been talking to architects about this, we are partnering with architects' firms that are trying to develop these local communities, about 20 to 100 households, or maybe 200, and they need to share some resources. Until now, all these things are actually arranged through a legal contract, which is the 'Home-owners' association' [*Verenigin van Eigenaren* in Dutch] so now if you buy an apartment in a shared housing block you become a member of this association of the housing block by default and by law, and they have their own 'constitution', a set of rules, the association's statute. The rules could go from: what time it should be allowed to play football in the collective open spaces such as a courtyard? Or it can state that it's illegal to rent your apartment to Airbnb.

Now, the architect or the developer is usually the one who sets those rules with legal professionals, and then these are passed on to the community, and then they form a board for the people who live there, and they can change the rules, etc., etc. When we

design a local platform for that community it's a bit the same, but now we don't write a legal contract anymore, we write a software code a 'yes or no' list for people to follow, regarding, for example, whether they are allowed to use or park their car under particular conditions, or whatever.

In all these cases it's the software that's directly managing the rights.

That's the thing. We don't give them just a legal document but a digital platform to manage the resources, and the digital platform needs a constitution that now becomes a smart contract rather than a piece of paper with rules, with the difference that it is self-enforcing.

We know that 'smart contract' is a little bit misleading as a word; there is nothing smart in these contracts. They have been called something like 'prescriptive mechanisms', and I find it more appropriate. They can always hide very tricky biases and once they are there it's hard to detect and change them.

Yes, and one of the questions is: what exactly do you want to govern on the platform and what do you want to leave out? When we were talking to these architects and we started this conversation, one of the ideas was: we can use such a system to administer everything, so if you do some voluntary work for the community that can be converted into a local currency and you can use it, for car sharing, energy-sharing scheme or whatever, but then it means that you are turning everything into a transaction in the community, and maybe you don't want to do that, right? If someone does something voluntarily for their neighbors, they do that out of intrinsic motivation, not an economic one, but the moment you put an economic reward to that, it changes the nature of it. People start seeing each other as economic actors rather than neighbors. Some people actually feel offended, they say: I don't want to be rewarded 0.3 tokens, I am doing this because I am a human being, I am with my neighbors.

Here we have outlined this imaginary of community-based platforms that goes in the direction of commons, but then the current framework on how digital platforms work is part of the capitalist ecosystem. I am thinking about other practical cases, like Barcelona. They started with a clear view and then they had to face problems on all levels: European level, national level, proprietary cables under the floor, very concrete things that actually prevented that imaginary from being actualized. What would you identify as the main problems of creating community-based platforms?

One of the biggest problems is the economic model of innovation. Innovation is now very much powered by venture capital, and that is: you invest a lot and you hope to earn a lot, so you are going to design a platform that captures everything, that centralizes everything, and then you can roam off or scheme off like 5% or up to 25%, and you need to get as big as possible.

Because of that model, there are a lot of investments going into these platforms, as the returns are potentially very high, and that money allows for a very nice design, a very user-

friendly one, but it also opens up resources for lobbying power, advertising power, marketing power, legal costs, etc. The alternatives, however, can never compete with that, because, by design, their model is not made to scheme off up to 25%, their design is to keep all the value local. But if you do that, how are you going to find the resources? It's very hard to compete with these platforms.

Trebor Scholz has written extensively about platform cooperativism: the platform is a digital infrastructure, but you also need different legal infrastructures around it. Now I'm just speculating, but since it's very hard to get the resources, governments can play a big role, because they are huge customers, and they have huge funds they spend for instance on IT contracts. They could provide funding for platforms that are based on alternative logics, and that are being used by the government itself and made available for citizens to organize all kinds of things. At the same time, however, governments don't have great track records in designing software systems, they always run out of budget, and they are often very clunky. You would probably want to set up some form of open-source development and stewardship processes around that.

When we talk about government intervention, the EU is trying to regulate the big players. Do you have some policy proposals?

I always find this a hard question. It depends on what you want to tackle. A radical idea is to make business models that consider personalized digital advertising illegal. You would take away their revenue model, like Facebook for instance. They constitute such a big danger to democracy that this business model should be illegal. I don't even know if I would be in favor of it, but it's certainly a thought to be explored. So that's one way: you can make a particular thing illegal, and you regulate it. Of course, another thing is, again, to stimulate it, to embrace bottom-up, open-source alternatives, and set up a funding scheme for development and resource for that, as well as the legal infrastructure for those alternatives, such as public-values-based platforms, making them able to operate.

Some of this also comes from Trebor Scholz's work. Some of the platform cooperatives are deemed illegal: the idea of people setting a particular price for a service is illegal because it runs counter to the market economy. It's considered a cartel. It's impossible to set up a minimum wage for freelancers, for instance. Even from a legal perspective, that's on different levels. There are some minor laws prohibiting particular things, but it's also perhaps a shift in the underlying philosophical ideas behind the legal framework, which is based on the free market. We check the economy against the values and rules of the free market, if something disturbs the market it is not allowed. But you could also turn this around: you say in the free market public values are central, and market mechanisms are only allowed if they contribute to public values or at least do not undermine them.

As for the infrastructure, there's the idea of legal protection by design, which is a little bit like privacy by design but extended to a systemic level. You need to look at prevention, not only at ex-post interventions because when it's there, it is hard to control.

We actually have speculated about ‘platform plugins’ in another project, so these could be sets of modular software packages that need to be incorporated into platforms operating in the market. For instance, think of a digital taximeter. That is a software package that companies like Uber would need to install in their software, like a piece of software like the analog taximeter in a taxi that registers all kinds of things, but now it’s a software and it can be prescriptive, so it can turn off the service after 8 hours because the driver’s law is encoded in that software. In this case, you are going to prescribe *ex ante*. It’s of course very controversial, again, because you are going to prescribe *ex ante* a series of conditions you cannot overrule. But that could be an interesting way to think of the law not as a written text but as active software modules that need to be incorporated in particular sectors to administer and encode prescriptive mechanisms.

How did you end up studying platforms in the first place? What still motivates you?

Since I started as a student in the early 90s I have always been interested in the role of technology in society. Back then we didn’t use these terms but sort of an assemblage theory, socio-technological concepts. We have the technology and on the one hand, we have imaginaries of the future, and those imaginaries are performative in the development of these technologies. At the same time, when these technologies are there, they reshape how we imagine what a community is.

A very influential book for me was Benedict Anderson’s *Imagined Communities*, where you can see that the invention of newspapers out of what he calls ‘print-capitalism’ was linked to the birth of nation-states, and the relation of how particular publics are shaped through technologies, and then these publics become a self-fulfilling prophecy in a way. You cannot completely predict that, it’s not deterministic. Motivations can be economic in the first place – like publishers seeing a new market emerging for printed newspapers or books if only they standardize diverse regional dialects into a standardized language so they can come to an economy of scale. But the creation of such a standardized language of course has a cultural dimension. Now they have created a shared symbolic cultural pattern – a national language - that becomes a key element in the formation of the idea of the nation.

Another really influential book I read was Ulrich Beck’s *Cosmopolitan Vision*, where he talks about methodological nationalism and he explains how the rise of sociology and statistics at the end of the 19th century produced, or reinforced, the nation-state rather than just documenting its population. From the moment you start calling people national citizens, they exist as a category. So the way you measure, count, and organize things has an influence on society. When you introduce new technology to society things change. For instance, the introduction of double-entry bookkeeping at the end of the Middle Ages was a new way of doing finance, which allowed a new way of doing investments, which allowed the rise of a new class.

It is interesting that you mentioned that. But what does a platform see? Platforms create the conditions for the emergence of generative patterns, they can see them and react. It would see the behavioral patterns of the population, and it was not like that, before digital technologies. Is practical knowledge – what the Greeks called ‘mētis’ - now seeable?

I think that's true. You see that there are some initiatives and then you can do some sort of reverse-engineering, but then you steer towards particular outcomes. For instance, social bonds are an example of that. Social bonds are ways of rewarding initiatives, companies, institutions or social groups for producing a particular result related to public values. So let's say I have an idea that will cause juvenile detention to decrease, and the idea is that I will start all kinds of neighborhood associations to give free boxing lessons because that will reduce it, and the government agrees. If that actually happens that's worth a lot for me because it's very costly, so if you can make that happen, I am going to give you half a million. But then you need to prove it, so you need to come up with some sort of indicators, and smart contracts measuring particular indicators related to a public value could play a role in that.

Same on reducing carbon emissions or organizing marketplaces. Because you normally use it in a more modernist way: you have a problem, I have the cure, we are going to fix it. But as societies are really complex, as we want juvenile detention to go down, we do not really know what we have to do here. Maybe it has to do with the health of the ecological system in the park, or the social infrastructure, but we don't really know that, so in a modernist way we cannot apply it. People could start taking initiatives but then in order to reward that you have to 'see like a platform', to understand the complexity, you need to make it visible. Again, I'm not really sure it's a good idea, because you are going to financialize some social problems, and if you do that people are not going to design to solve the social problem itself, but they are going to design things that influence the right indicators.

But how do you justify that to the government?

The thing is that if you use social bonds, the government pays out the rewards if a result is being made. Investors invest upfront in social initiatives or programs hoping they will reap the reward in the end. This could stimulate societal initiatives. Such a system could be very beneficial for commons-based social entrepreneurs, because they understand the local environment. They have a good feeling about how they can work toward these outcomes and the complexity of all that, which you could never really explain to governments – like why it is good to plant an edible forest somewhere: you plant these trees, people can harvest the fruits, but they also set up an organization that takes care of the trees, a whole ecosystem emerges around it.

Basically, it is a platformization of public values you want to achieve, and somehow match these with economic rewards that are needed to organize the stuff here. It's a different way on how you can run a particular problem in society. But there are huge risks, because the moment you financialize it, you can be sure that financial institutions are coming in and they are going to short-sell them, and build derivatives on top of them. Political debates will emerge about the data and indicators that can be used as a proof of the results, and in turn, this could steer investments – rather than the social cause in itself. You really need to avoid that because if people start coming in for their own reason to make maximum profit.

In this sense, there is a lot of discourse around making platforms accountable. If we look at the etymology of the word responsibility we can identify two senses: one is precisely accountability, while the other is 'care'. Can we think of platforms like benefit corporations, as infrastructures that are drivers of change, coupling profit with the care for the environment they create? In brief, can we talk of 'platforms of care'?

Yes, definitely. What I have been talking about could be something like that. I am thinking of this interesting experiment I have seen in Athens. Here the basic unit of the city is the *polykatoikia*, which is this shared housing block of apartments. That's how the city has developed: individual farmers selling out their land to developers who build housing blocks and housing blocks and they have one, two, or multiple owners. Housing blocks are organized around courtyards that belong to everybody and belong to none. Right now, these courtyards are a bit of a lost space, people use them to dump their trash, and they are not very pretty because nobody is really responsible for them. So some architects said: we are seeing that Athens has a lack of green areas, of parks, so could we find a way to systematically turn these courtyards into communal green spaces? So we set up some sort of organization, we do co-design planning of what exactly the space should be and then we turn it into a green space, which is a great idea, right?

I think you could call this care, taking care of the city and of the environment. It contributes to city-wide goals like reducing heat, better air, and others. But - and that's what we run often into - it's sort of the inverse tragedy of the commons. So, the tragedy of the commons: the profit is mine but the cost is everybody's. Now it's the other way around: I invest, but the profits are actually for everybody. So how can you make that profit for the city as a whole available to the people who care, who take the initiative? These projects always fail because there is no business model, I invest but we all profit, why would anyone pursue it? So how can we use platformization as an administrative system, as a rights management system, a reward system, that allows unknown actors at front to take initiatives that contribute to public goals? People who invest should at least be able to cover those costs.

It is about finding ways to make working towards collective goals economically worthwhile, at least without losing money or time, or at any rate finding a way to make a living out of it. The question is how and at the cost of what.

You talked about steering, which brings us to the etymology of cybernetics: to steer and to govern. This points out, for me, that platforms are inherently political machines. When I looked at the design choices made by Stafford Beer in building the Cybersyn platform, I was amazed. Everything was supposed to be anonymous, and through Cyberfolk workers would have expressed their happiness by moving a dial, and the aggregate data could have been used to redirect resources or investigate why a particular area was unhappy.

I think this relates to what I was trying to explain before: producing a public value within the city - in this case, happiness - and coupling that to resource allocation rather than the other way around, organizing platforms in such a way that they maximize monetary gains. It's a very interesting experiment and way of thinking. I mean, also in the Netherlands, we

have all these government advisory agencies, like the national planning agency, and they do all these polls in society and warn the government. A few years ago they introduced what they called a 'broad idea of wealth' [*brede welvaart*]. The indicator should not be GDP but also include aspects such as equality, happiness, and others. So even official government agencies take a turn in this direction, although I'm not really sure to what extent it's operational in actual policy. But it does signify a shift from this really neoliberal way of thinking to public values as the goal of policy.

Ok, let me use another etymology. Regarding the word public, I find it interesting that there is also a double meaning as the opposite of private but also the opposite of secret.

In *The City as an Interface*, I have also used the word public based on the idea of imagined communities as a group of people that have something in common. In Dutch, a public is also the audience, people who experience something together. And then public of course also has the meaning of revealing something, of making it knowable, as in the opposite of keeping something private. These two aspects are linked: publics can emerge because their members make something public about themselves – through their dress, speech, communicative acts, behavior – that allows others to recognize a commonness between them, and thus to become a public. So an issue, a shared identity, needs to become public and reveal something about ourselves, so a larger public can share around that. I find it very interesting: what are then the mechanisms to make things public?

If you look at urban theory, public space plays an important role. Marshall Berman wrote this beautiful book called *All that is solid melts into air*, and he writes about how the boulevards in St. Petersburg played a role in the emergence of communist groups, they would come out and see each other, and recognize that "it is not just me, there are other people". Public television works in a similar way: it shows us who is Dutch, a map of the Netherlands, so that people who live in that territory feel like they belong to that map. I traveled through countries that had contested borders, and if you look at the weather maps, they do not follow these borders. If you go to Pakistan, they also predict the weather for Indian-administered Kashmir, or if you went to ex-Yugoslavia in the 90s, the television news showed you how they imagined each territory belonged to the various groups.

Again, Benedict Anderson says that newspapers started to standardize the English language. Before it was all these dialects, but it was too expensive to print news or bibles in all the different languages, so we came to the centralized way of spelling. You could still pronounce it differently, but from that moment on – and that's why they are called imagined communities – other people can imagine others reading at the same time, so you actually start becoming a public through the media. So how does it work in the digital age?

If we think about famous cases like Cambridge Analytica, wasn't it kind of the opposite? Targeted fake news based on your worst fears. So in the English countryside they would see something like "With the EU, Turkish people will come to England". Is the idea of the public sphere even theoretically gone?

Indeed, it's the end of the public sphere in the sense of an undivided public sphere, what we see is being fragmented and the public is also fragmenting itself around those messages. There are also some other people that are talking about the "in-dividual" versus the "dividual".

You can say it in a Deleuzian sense. He meant something like a totally computable subject, that can be always completely calculated.

Yeah, individuals are seen as an undivided whole, but what happens now is we are being torn apart, and so are our particular behaviors, and particular databases. We are not targeted for what we are as a whole, but for very particular preferences we have. I guess that something similar is happening within the public sphere, it is being fragmented in very narrow sub-identities and there are all these intersections among them.

If we compare this process to methodological nationalism, where sociology gives origin to categories by defining them, the question now is who defines these categories. I'm not really sure if algorithms already have pre-conceived categories – or even whether there are such things as categories - rather than looking for any kind of stuff that comes together when they start seeing all these patterns. There is a very individual stream of things. I'm not really sure if the metaphor according to which we are being put into boxes really works because I am not really sure that boxes exist. The computer does not have a concept of the categorical level. We can agree that categories are not prescribed but they emerge, anyway.

One last etymology is that of the institution. Institutions 'stay', while platforms keep on changing, they always adapt to the environment but they also adapt their environment to users. The metaphor here is that of Theseus's ship: changing while remaining the same.

Recently I have been reading about institutional theory, which has this categorization of institutional logics: church, state, corporation, family, marketplace. What is interesting about platforms is that they combine some of these different logics. On the one hand they are corporations - because they centralize and dictate all the rules; on the other hand they are marketplaces. When I look from this perspective I see that each institution has a particular way of acting in the world. The profession is an institutional logic: if you are a journalist you subscribe to a particular professional code, you behave in a particular way, you follow a certain ethic and it is not about making the most profit, it is about the public and trying to act objectively.

In this sense, there have been some proposals to make designers a protected profession.

But a protected profession is also a way to keep people outside. Journalism is not a protected profession; anybody can become a journalist if they call themselves so. But that means that journalists, among themselves, will hold their colleagues accountable for the way they work. You call yourself a journalist, but you did not check the facts, you are not a journalist. That's about an ethical code of conduct. This helps me understand what goes wrong when Facebook organizes the news, because there is not an editorial department organized on this professional logic, Facebook does not have that, no obligation to show you two sides of the

story. So what exactly is this news, how should we understand it? Because it doesn't fall into the categories of institutions and their logics as we have known them.

That brings us to the beginning, the platform that has eluded our categories.

The opposite is happening as well: it's no longer the government that writes the law but it's these platform companies that write laws; as Tarleton Gillespie has put it, it's not the governance of platforms but governance by platforms.

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Fig. 8: Platform as Squid/Octopus

THE INFRASTRUCTURES AND DATA FLOWS OF SOCIAL MEDIA PLATFORMS

INTERVIEW WITH ANNE HELMOND

*Anne Helmond is Associate Professor of Media, Data & Society at Utrecht University and founding member of the **Digital Methods Initiative** and **App Studies Initiative** research collectives. She is a central exponent of the software studies tradition of platform research. Anne plays an important role in the present book, as she was the first to coin the term platformization to conceptualize the rise of the platform as the dominant infrastructural and economic model of the web and its expansion and integration into websites, apps, and industries. But Anne not only has the technical skills to investigate platforms' architectures; she is also willing to explain their relevance in the political arena. As such, she is an invaluable interface for humanities researchers. During the interview, we discuss the technical and relational preconditions of the power of social media platforms, such as APIs and terms of services, and the challenges they pose to platform research. The interview took place in December 2021 at the department of Media Studies, Amsterdam.*

What is your definition of a platform?

A platform is already multiple things. It is both an object, a metaphor, a discursive construction, and a way of doing business. When I refer to a platform as an object, I understand it as *programmable infrastructure* and consider the materiality of this infrastructure, as well as the discursive way in which companies position themselves as platforms. Another aspect of a definition of platforms would be that they present a particular way of doing business in a broad sense. A platform model refers to a specific organizational structure and a business model. For me, a platform is all the above things at the same time. It is a material object that is built in a particular way, it does things, it enables and constraints, it is governed in particular ways, and the business side of it co-determines how it operationalizes that materiality. For me, these are all the sides of the same coin.

This is also why Tarleton Gillespie's now "classic" paper on the politics of platforms is still so relevant, because of the way that these companies position themselves, eliding their responsibilities as both media companies and as advertising companies, which is what I have been focusing on recently. My main object of interest is social media platforms, and an important question - which Geert Lovink has also been working on a lot in the past - is: what is social about these social media platforms? In my recent work with co-author Fernando van der Vlist, we have been interrogating social media not as social platforms but as *advertising platforms* because advertising is their core revenue model. We ask how social media have embedded themselves so deeply into the core digital advertising ecosystem and what this means for how social media data is made valuable by other companies such as data brokers.

We argue that if 99% of the revenue of social media comes out of advertising, we should call these companies by what they really are: they are advertising platforms and not social platforms.

I was wondering about the metaphor. If we look at the graphic you use in your work on Like Economy (with Carolin Gerlitz) - where you highlight all the connections of the platforms with third parties – as well as your work on the platformization of the web, can see these fluctuating (data) flows. Marc Steinberg, in his book 'The Platform Economy', quotes your work using the metaphor of the octopus or the squid.

Oh, because of the tentacles! That would absolutely work. Here I am also thinking about the work of Dwayne Winseck in Canada who examines media concentration and monopolization in media markets that are affected by platforms. He also talks about Big Tech companies as squids, or as animals that crush markets. So, the metaphor could be tentacles, but the way Big Tech platform's function is also bordering on the metaphor of a strangling snake. So, for me, the metaphor would be a squid whose tentacles function as locking mechanisms, where it is not only about squishing markets, but it is also about locking them in. Platforms are developing these tentacles as infrastructural extensions to make the rest of the market or other actors dependent on them. But when thinking about platforms metaphorically, I am also thinking about Lego blocks. If we would start to draw this, it would become very interesting!

Because of platforms' modularity?

Yes, and because of the modules (apps and software services) that are built on top of platforms, which then function as extensions. In a recent paper with van der Vlist, we really draw out these tentacles even more when we trace and map platform partnerships and the interconnections between platforms that are established for the exchange and integration of data flows and services. In that paper we started from the premise that social media platforms are primarily advertising platforms, and that they engage in all kinds of entanglements. We then traced how these platforms engage in business partnerships with other platforms (e.g. with advertising networks and data brokers), which are official partners that are listed on their websites. We then mapped out what we call the *partner ecosystem* by drawing lines between all of these social media platforms, their partners, and the partners of these partners.

In this giant interconnected map, you find all the social media platforms, but also media companies, data intermediaries, data brokers, and all kinds of advertising and marketing platforms that social media platforms have integrated their advertising and marketing data and services with. It is also an argument for decentering the platform in platform studies. When we talk about platform power it is often from the perspective of the platform as a single monolithic object, while one could also ask: how does the platform operationalize its platform power?

In this paper, we argue that platforms do so by engaging in all kinds of partnerships that platforms use for entrenching their tentacles into other industries, which they are then also

changing and transforming. We also argue that due to these partnerships, collaborations, and data exchanges, platform power does not reside in a single social media platform but that it is a distributed accomplishment with the help of their partners, who extend their power into new domains and industries. This is also an important way to think about these tentacles: they are not merely built by the platforms themselves, but also in collaboration with partners who then help platforms to disseminate into other domains, sectors, and industries (in return for access to platform data or functionality).

If we look at Science and Technology Studies (STS), I believe there is a clear analogy between the development of scientific paradigms and the development of Google. When AdSense came out in 2006, there was a situation in which if a website incorporated Google's plugin, it became symbiotic with Google. On the one hand, the more the platform became successful, the more people would visit that website; on the other hand, the more people visited the website, the more money and data could be connected by Google. Is this indirect partnership similar to the one you study?

Yes absolutely, that is why it is also about changing the platform metaphor to include other parties or stakeholders in it because a platform cannot operate without its partners, third-party developers, or advertisers. In the past, I have written with Carolin Gerlitz, about what we called the "Like Economy", which is where this early idea of platforms extensions comes from as we describe how social buttons from platforms function as extensions and data extraction mechanisms. In that paper, we draw attention to the role that webmasters and web developers play in integrating these social features into their properties such as websites and apps. So it is not merely Facebook that is doing all the tracking, it is also enabled by all of these third parties that benefit from it. These platforms and their revenues could not exist without this network of partners around it and without webmasters and developers integrating their ads or social plugins into their websites and apps. So yes, platforms have a lot of power, but we should also consider the agency of these third parties that partner and integrate with platforms.

In another recent project with Fernando van der Vlist, Marcus Burkhardt and Tatjana Seitz, we have been interested in understanding the evolution and governance of and by application programming interfaces (APIs). APIs enable programmatic communication and the exchange of data and functionalities between different software systems and allow software to "talk" to each other and exchange data. As such, they also govern the data access of platforms such as social media by providing the technical rules and conditions for this access. So they function as important governance mechanisms for platforms, and to understand how this works it helps to be able to read their API documentation. This documentation is publicly available on the developer pages of platforms and provides important information about what data is available, under what conditions, and specific rules of access.

When you read the CEOs talking about how platforms should be developed and maintained, they literally say that you create a successful platform when you put someone else to do the work for you. But the next question is a little bit more personal: what motivates you to study platforms? Has the study of platforms changed over the last decade?

I think at the beginning, when we are still talking about Web 2.0 instead of social media, there were these early calls (around 2007–2009), for example by David Beer, Greg Elmer, and Ganaele Langois, for more studies into the *materiality* and substrate of Web 2.0. This really resonated with me because I always had this interest in how new media objects are built to better understand how they function. So how can we understand the role and effects of platforms by examining their inner working through their underlying infrastructures? This interest already emerged earlier because before I did a Ph.D. in Media Studies, I went to art school in Utrecht.

In the late 90's "Internet Studies" as such did not exist yet, so I studied Interaction Design and I was trained in multimedia design for CD-ROMs and websites. So it is very early in the 2000s and I had to learn JavaScript, Java, ActionScript, and all kind of ancient languages. When I graduated, I knew that I did not want to become a multimedia designer or interaction designer because I was always more interested in the inner workings of the medium and how it shaped sociality and our culture. Initially I was not sure what I was going to do after studying Interaction Design, but I now realize how valuable and formative these years were in shaping my attention to technicity and material workings of new media objects by training myself to be able to read and understand their technical documentation.

When I started my PhD there were these cautious calls to investigate the materiality or substrates of platforms, and now it is a central issue in new media studies and almost at the core of all my research projects. That has really changed, right? Initially new media studies was very much about user studies. Of course, this is a very important aspect, but there was an over attention to studying users and the effects of platform on users, and how they shape behavior, but we cannot understand these issues without a better understanding of the mechanisms or underlying logics of platforms. So I think that this de-emphasis of the user has been good for the field, and maybe we should now have a de-emphasis of the platform to acknowledge how it does not operate or hold power on its own.

Platforms keep on moving, keep on changing and adapting to their environment, but we could say that they are also environments themselves for the groups they match. Will this make platformization last in the future?

That's a nice ecological metaphor, because we talk often about platforms as creating ecosystems, as inhabitants of ecosystems as well as the adaptability of platforms in relation to other actors and their surroundings. In the information system literature this metaphor is also very present. They use it to provide a framework to talk about how platforms are embedded in various types of dynamic relations and the metaphor helps to talk about external relations and platforms adapt to external pressures. Because that is what these platforms continuously do. Platforms evolve all the same as I have examined in detail with van der Vlist and Nieborg through the notion of "platform evolution".

In terms of will it last, nothing last forever. It was only 13 years ago in 2008 that the last Web 2.0 conference was organized and that we started to talk more about "platforms" instead of "Web 2.0". It is only 13 years ago that this metaphor of the platform took central stage, and the

idea of platformization was already there with Google and AdWords. I consider platformization as process of extension and appropriation and this has been slowly operationalized by various Big Tech actors since the early days of the commercial web. Amazon has been around from very early on and was one of the first to offer its API so that websites could sell books from within their own websites (an example of expansion), and there are many similar types of actors that are continuously seeking new industries and business models with such techniques.

If you consider the platform as merely an intermediary or a marketplace, connecting different sides of the market, or also as a programmable infrastructure, then the platform could be seen as almost an inherent aspect making use of or exploiting some of the openness of the web. Key web technologies functions like Lego building blocks to build new stuff on top of it. In the past, this was done with open protocols like RSS – which enabled remixing of data – but now this is mainly operationalized by APIs. The main shift is that while RSS was an open standard enabling data mashups and remixes, proprietary APIs from platforms determine the conditions of what can be built on top of these platforms using their data and functionalities.

Finally, in terms of “will platforms and platformization last”, what I find interesting is that in the past three years, despite all the controversy, platforms such as Facebook were still attracting millions of advertisers, and their revenues initially never went down. Now there seems to be this breaking point, after Facebook whistleblower Frances Haugen “revealed” the company’s poor data sharing practices which researchers have been warning about for almost two decades. Now even investors are slightly rethinking how this will work in the future, but you immediately see Facebook readjusting to changing situations by rebranding itself into Meta. I would say that this is not merely a rebranding of the company but an infrastructural move into a new internet space: the metaverse, as they call it. It is an infrastructural occupation of internet-enabled territory which exists outside of the web space as we know it now. It is the same move that Facebook has done in all these countries where internet connections are poor. Facebook just calls the dominant national network providers and says: we can provide internet in these areas for free. But of course, what these users are getting is not the internet, they are getting Facebook. It’s how these platforms are continually seeking out industries, markets, but also building new types of infrastructures to be at the forefront of.

The ultimate goal would be, as it is in India in some places or in China, Internet equal platform. WeChat and Eastern regional platforms are a very interesting case, also because technology production seems to have partially shifted there. For instance, in WeChat you have these mini-apps that allow you to live your whole social life inside it.

If I think of the US-based model of platformization (e.g. by social media platforms) it is more about outward extensions (e.g. through Like buttons and API-integrations with other platforms) and with the Asia-based model of platformization as we see for example from WeChat it is more about internal integrations, where they integrate everything into one thing. With David Nieborg I further explored these internal and external extensions as different modes of platform expansion and Marc Steinberg is conducting important work on the operational logics of platforms and super apps in Asia.

What would be your futable imaginary about all of this? How should the platform change in the near future?

That is a difficult question. I was trying to think about this from different perspectives, but I continuously return to how we can rein in their power. At this moment the platform economy is a very unregulated industry and business and holding platforms accountable is very difficult. It has been done very well by many scholars, and some journalistic outlets and newspapers such as *The Markup*, *The Wall Street Journal* and *The New York Times*, who have been doing very well in trying to expose or investigate how companies and technologies work. I don't want to use the metaphor of the black box, as for me this doesn't particularly hold true, as there are many ways in which we can investigate platforms, it is just that they make it very difficult for us on purpose. The shutdown of many social media APIs that have been used by researchers to investigate how misinformation spreads throughout platforms means that we are now missing very valuable tools to examine these issues.

The problem is that platforms have multiple categories of users for these APIs, they are used by researchers, app developers, advertisers, and others. Previously they didn't always distinguish between researchers and regular developers, so they would have equal access. That was also the problem with Cambridge Analytica which used data gathered from the Facebook API in an allowed way in a different setting. Then they shut down many of the API data access possibilities, thereby also shutting down all the research tools that made use of that data. My colleague Bernhard Rieder had a really good tool for investigating Facebook, but you had to re-apply for access to the API every year and it was denied at one point. He appealed, but it took so much time and for years and years he was constantly adjusting the tool to have it function and it was eventually shut down. The problem is that these platforms don't distinguish between regular developers and researchers.

Platforms like Twitter are now doing quite well in building a research API, where they are also seeking conversations with researchers working in the field, asking them what kind of research they want to do with their APIs and how they can enable this. Facebook has also been doing that, but the problem is that they set up some kind of research consortium called Social Science One, where you had to apply with a research proposal, but you could only do it if you were connected to a selected set of universities.

This effectively meant shutting out independent researchers, and when you saw the proposals that were being granted, they were mainly from elite Ivy League universities, and the company was controlling who could do what type of research. So for me this idea of API access for researchers is very important to hold these platforms accountable, but it should not be the only way. Many people talk about holding these platforms accountable via API data, and that is one thing, but we should also be able to develop our own ideas of how we can monitor what these platforms are doing.

I am thinking also about the "Ad Observatory" from New York University, which built a browser plug-in where they asked people to collect what kind of ads Facebook was serving them. But then they were sued by Facebook for violating their terms of service. From a researcher's

perspective, this was a super creative way of trying to develop a research protocol to assess what kind of political ads were being served to users.

It's a sort of reverse-engineering for the researcher. But we usually hear about platforms performing a public function. Looking at the etymology of the word public, we can trace back to possible meanings: it is the opposite of private, but also the opposite of secret. With platforms, the way conflicts are resolved usually remains hidden. How do you deal with this issue?

There is a very interesting paper about “platform observability” from Bernhard Rieder and Jeanette Hoffman who argue that transparency in itself is not sufficient, or it is not the answer to our problems. For example, what we can know about “the news feed algorithm”? This algorithm does not exist, as it is composed of hundreds of algorithms that are interconnected with user behavior and other algorithms. There is indeed the idea that transparency won't help us, or getting the source code of something will not help us to understand how the object operates, as the object or algorithm is always part of a larger technical system.

In that way I find their notion of platform observability super important; Rieder and Hoffman foreground means to operationalize observability instead of requesting or demanding transparency. And for this, we need to build multiple mechanisms to have this platform observability like the browser plugin. Researcher API access is a good starting point, but we also need additional mechanisms for observability because API access is always provided under the conditions of the platforms. The browser plugin is a good example of a mechanism with a particular research objective built into it, which was built on top of the platform that had to be observed without being dependent on the platform's API. So we need to come up with these creative ways of thinking for observing platforms.

Extraction from the extractor?

Exactly, Christian Sandvig and his colleagues developed what they call ‘auditing algorithms’, where they employ the metaphor of auditing platforms. As a technique, Sandvig is an active proponent of “scraping” (collecting and copying) data from websites – which was also used by the Ad Observatory. Last year he even won a court case allowing breaking the terms of service of platforms for research purposes when scraping stuff from these websites in order to be able to audit or observe them. So while Facebook said it blocked the Ad Observatory tool because it is against their terms of service, if New York University would go to court now this may be ruled differently due to the Sandvig ruling. Allowing scraping for research purposes opens up new possibilities for how we can observe these platforms.

What would identify as the problems that prevent that imaginary from being actualized?

One limitation of course is the creativity of us, researchers, to think of novel ways to approach that, right? If there is a colleague sitting here and developing something and then Facebook comes with fifteen lawyers to shut it down, then we have an equal balance of power, I would say. The other thing related to this discussion - that I follow with great interest - is interoperability. Should platforms be obliged to have interoperable mechanisms, so that they could leave

the platform or take their friend network to another platform? And if it's private data, how do you make sure – if you build all these interoperable mechanisms – that people do not export excessive amounts of data? This issue was at the core of the Cambridge Analytica scandal, which was not a bug but a feature of how Facebook's API was supposed to work. It was designed to extract data about your friends as well, and this data was then used in a "creative" way, if you will. Interoperability in a way is also how platforms entangle themselves with other platforms, solidifying their position.

But platforms also create the conditions for these interoperability standards by appropriating open web standards as their own. For example, with van der Vlist I examined how Facebook had this schema of how they understand websites (FBML, Facebook Markup Language), which is based on an open standard (HTML, Hypertext Markup Language). So they created their own Facebook version and then your website becomes interoperable with Facebook. But not the other way around. This is what Robert Sutor means when he says that when technologies talk about interoperability, they are suggesting equality, but they are actually operationalizing *intra-operability* because this interoperability only works one way. So platforms are imposing their interoperable logics onto others while also enabling their data extraction models.

This notion of intra-operability is interesting to me, because on the one hand interoperability allows platforms to exchange data and to extend themselves into other software, industries, and domains, but this extension also means solidification and entrenchment. Platforms determine how these technical gateways are being built, how they are inter/intra-operable, and they govern them in specific ways. In this context, I am also interested in Cory Doctorow's notion of "adversarial interoperability" by which he means creating a new product or service that plugs into the existing ones *without the permission* of the companies that make them.

There was also a Simpson episode where Mr. Burns showed his army of lawyers!¹. But the GDPR do provide the right to data portability, and platforms had to develop this procedure where you can ask for you data and receive a zip folder; and researchers are starting to use it in a creative way: let's aggregate a lot of requests and see if we can use it as a leverage to counter platform power, and open up databases. But then there is the usual problem: what do you use these data for? Until there is no alternative platform to bring them, it's the same old trade-off. How would you suggest to face these issues?

This is the most difficult question. I know at least in the UK, the Netherlands and Norway, the consumer authorities, like the data protection, competition and markets authorities, are really interested to talk with researchers. The UK Competition and Markets authority are producing good reports and they are also really looking at the underling mechanisms of platforms and how they work. For example, in their inquiry into Facebook and Apple they also examined how APIs enable these platforms, these monopolists, to solidify their power. These reports are very valuable because they get to the nitty-gritty detail, for example, how they use their API to knock out competitors. I don't want to put all my faith in them, but I do find that these

1 https://www.youtube.com/watch?v=kqO5uiB4cjo&ab_channel=JarethTheGoblinKing

institutions play a very important role in addressing these current issues to formulate solutions. Sometimes I read their report and I say: this is a research paper I wanted to write!

We now also here that platforms are becoming institutions of society. But by looking at the etymology of institution, there is an idea of stillness, while platforms move fast and break things. Can our institutions evolve quick enough or do we need to rethink the entire institutional mechanism? For instance, in a very recent report, Annabelle Gawer and Nick Srnicek concluded by proposing to create a "Platform Compliance Unit" at European level that that would be in charge of new and platform-specific regulatory obligations.

To think about an institution to monitor technological change would already be a very good new development, right? I think that the EU has now found a way to engage with this topic, by also including platform researchers. For example, they have the Observatory of the Online Platform Economy which consists of an independent expert group of researchers. Of course, one of the remaining problems is that whilst competition authorities are fining Big Tech company's (for example the Netherlands Authority for Consumers and Markets (ACM) has fined Apple for failing to meet its requirements on payment systems for dating apps), these fines are very low in comparison with the actual revenues of these platforms. So these fines almost function more as a signal, but I would say that we are done signaling.

The mergers and acquisition of platform companies also important to consider. When Fernando van der Vlist and I produced that map which showed how platforms are embedded in the giant advertising ecosystem, we were also monitoring these companies over time and observed continuous mergers and acquisitions. What we argued in our article is that this means that platforms are also acquiring and merging their client networks, their data and databases, and their infrastructures for making data valuable. So mergers and acquisitions are typically about these three aspects: client networks, data(bases) and infrastructure.

But here comes the problem: how do you embed certain values in the digital infrastructure?

This I also what our research group Governing the Digital Society at Utrecht University is working on, asking: how can we think about platforms from a European perspective, how can we incorporate public values? This question is very interesting to me, as well as: what are these European values, and how do you translate them into technology, if you want to operationalize and build it? I think it is a very interesting and urgent question. We continuously talk about Big Tech, by which we often mean US-based Big Tech, but now we also have powerful Big Tech in China, Japan, and South Korea. But sometimes I feel we are always talking about these major players that play an important role, but there also all of these other players that operate in the shadows.

Amazon is critically being examined as a key player providing the web's infrastructure. However, it's less studied as an important player in the data space or as an advertising company. When we examined these platform mergers and acquisitions in the advertising ecosystem, we actually found a big set of important platforms which are seemingly operating in the shadows but who run million-to-billion-dollar businesses. These are platforms whose

core business is being an identity platform. With the current move away from cookies and other upcoming changes to limit user tracking, we observed that the industry is now focusing on this particular type of platform that focuses on identity resolution. It's only because we were mapping this whole industry and using social network techniques to locate central players in the network that we found out about this.

It's a category of platforms that we hardly pay attention to, but we should. If advertising is going to stay the core business model of the web, these identity platforms are positioning themselves as the key players who are going to be the ones that help advertisers target users. What we explain in our article is that these identity platforms provide services to clients by aggregating user data from all kinds of sources and then create user profiles for targeting. This also means they connect 'offline' data such as credit card purchases or voting data to a profile and connect it with their available online data about this person. As such, as data aggregators of personal data they play a central role online.

Maybe a platform could be held liable for having built a particular kind of infrastructure. Can you regulate (or standardize) the affordances of the platform?

It's very difficult. With Taina Bucher I have examined the affordances of social media platforms and we found that in the literature, features and affordances are often seen as the same thing. In this understanding, the affordance of a platform is understood as a kind of a technological feature that operates in a particular way. On the other hand, people in affordance theory understand an affordance more as an open space of action possibilities between the user and the platform. This understanding tries to move away from technological determinism, as affordances provide a form of agency to the user to do things differently.

If people are talking about regulating affordances it seems to me that they are talking about regulating particular features, mechanisms, or logics. For example, feeds (such as the Twitter Timeline or Facebook's Newsfeed) are typically always algorithmically sorted. I can imagine one could think of a framework where one could say: if you offer this dominant logic or organizing mechanisms such as an algorithmically sorted feed, then you should be obliged to offer different possibilities for users to have it rendered.

Another recurrent call is to hold platform responsible for their actions. If we look at the etymology of responsibility, on the one hand it points at accountability, but on the other of care. Are these platforms of care imaginable? I am thinking along the new rules for "benefits corporations" that take care of the environments in which they operate.

If this is a proposal, I think it is a really urgent one that might be lacking at this moment. I remember at 2011 I was at a conference in New York about algorithms and there was someone from the industry, I do not remember which company she worked for, but she worked on optimizing processes. She was very dry about it, for her the research was almost mathematical, and she was proud about how they were optimizing this process, it was also about targeting users, but there was no question at all on what this optimization might mean for the user. There was no idea or impact or ethics behind her perfect operationalization of

the process. Currently, there is all this talk about data scientist taking courses on ethics, right? It positions ethics as an afterthought, and it seems a bit like a simplification.

I would say it is about platforms having a particular business model and then aligning the company's employees to execute that that model and the company's vision, often lacking an idea of the impact of what that implementation or actualization could be. In addition, within a company you have all these people working on particular topics and technologies, but once you put all the puzzles pieces together you get this enormous system that operates in a different and unanticipated manner. Some people are doing very well in their job but not considering the actual part of the system that they are part of, or consider what the consequences of the whole system could be.

Also, how do these platforms deals with internal critiques? The Facebook leaks revealed that there were a lot of internal struggles with some of the things that were being developed, some of the strategies that were explored. However, at the core Facebook is a company with a board that operates for its shareholders, and Zuckerberg has 60% of the shares. It's a power pyramid, where you can have a company with people complaining, but if the company doesn't deal with any of these critiques it's also poor management. It's also more of an open question how to deal with such issues. If you would join Facebook as a new employee now you should know what kind of company you get into. But I can also imagine the internal struggle if you have worked there for six years, and the questions around "should we give developers access to this data or not" or "is providing this data good for our business model" get increasingly complex. These platform companies evolve over time and employees, regulators, and users should collectively push back for change.

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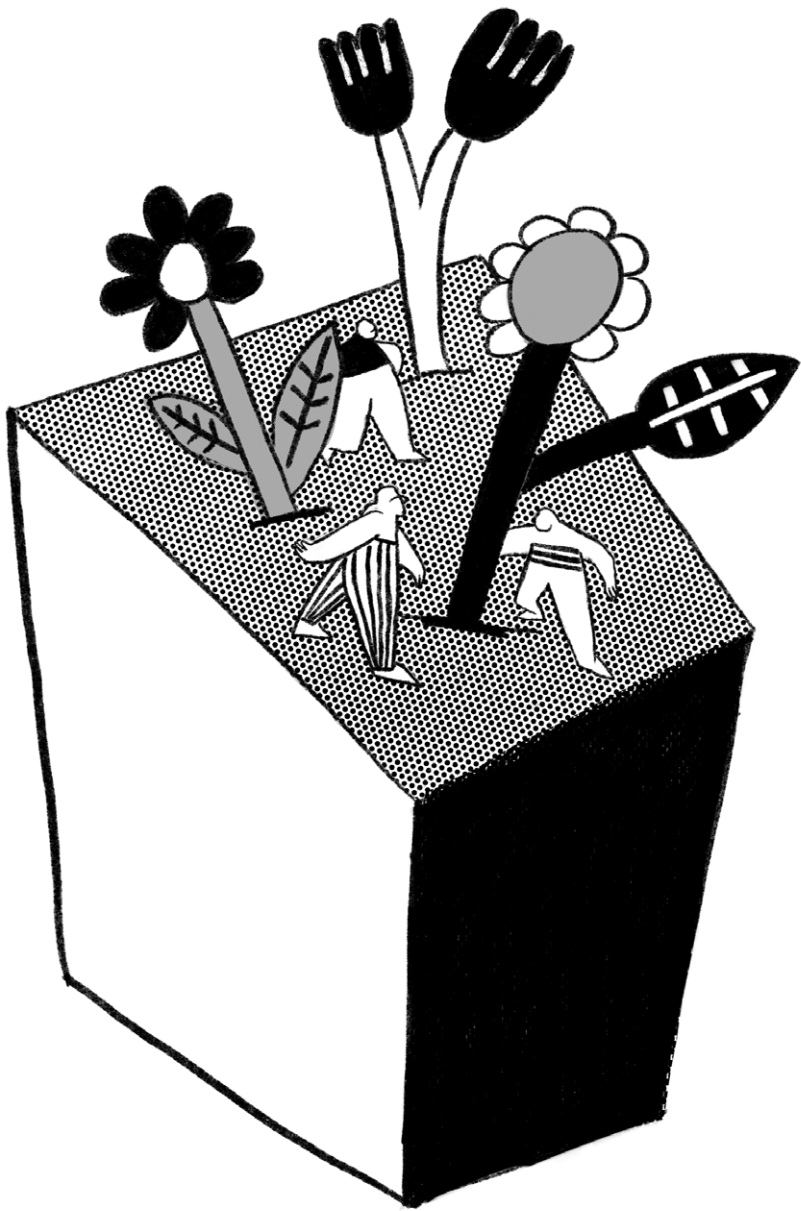


Fig. 9: Platform as Walled Garden

THE PLATFORMIZATION OF THE NETWORK IDEAL

INTERVIEW WITH GEERT LOVINK

*Geert Lovink is a tactical media activist, literary avant-gardist, media theorist and internet critic who prefers to speak to artists, designers and citizens rather than academics. During the past 30 years, he has been the quickest in detecting every relevant techno-political change in society. Over the pandemic, I sent him an email after reading his book *Sad by Design*, and we started an email exchange that ultimately brought me to his research institute in Amsterdam. What brought us together, apart from the awareness that the contemporary platform model is fundamentally wrong, is the interest in platforms as political machines beyond traditional 'media' categories and their future role in political organization. The interview took place in his small but cozy room at the Hogeschool Van Amsterdam (HvA), completely surrounded by books in various languages and on the most different topics, right after Russia's invasion of Ukraine and before the publication of Geert's latest book, *Stuck On The Platform*.*

How would you describe the platform?

There are several definitions, some are historical, others political, and others emerged from the scene of internet research. At the moment, I prefer a definition that is close to the everyday life of ordinary users of platform as meta websites. Let's start with the confusion I ran into for the first time 10 or 15 years ago. My sister once told me: 'I don't use the internet, I use Google.' Of course, that remark was made in the Web 2.0 era, but it still sums up neatly what we are talking about. It is an honest observation, and I didn't think my sister was stupid. In fact, she was very precise. At the time it really was a wake-up call for me. From that moment on, it seemed kind of useless to debunk it, to say 'you're not right' or even 'you shouldn't use Google'. I saw it as something that is honest, coming from everyday life, as she is not at all involved and far removed from anything technological.

It was around 2012-2013 that we started using terms such as 'social media' and 'platform'. Both pointed to an unprecedented form of centralization and concentration of power and infrastructure. An example: previously, we considered the dynamic of interlinking as the driving force of networking. But then we saw scientific peer review articles refusing to use hyperlinks, referring only to an author in the same issue, or maybe a very selected group of authorities - be it a supervisor or professor. This meant creating an intellectual enclosure for no obvious reason other than the workings of power. There was no technical reason not to do that as any scientific journal can link to an outside website. The same happened on websites of news media.

In the past - maybe twenty or thirty years ago - people were confronted with all sorts of technical limitations. However, this was something else: the deliberate creation of new enclosures with journalists and academics happily contributing. Coming from an incredible

world of technical possibilities, we were faced with deliberate participation in the making of enclosures. The platform is the embodiment of that tension between limitation on the one hand and possibility on the other. Of course, there was not just repression. Certain possibilities are used - for instance, connectivity, speed, especially when it comes to outer linkages, that are deliberately limited. Platforms want you to stay on that platform and will fight the idea of the internet as a network of networks.

Are these cybernetic enclosures different from before? Are they at the same time open and closed?

The platform is open to pull in services, data, and users, yet they hesitate to invite you to step out of it. They do not want to deal with the network out there. The platform is a monad without ecology. It operates like a vacuum cleaner. No rhizomes for you. There is no platform ecology, it is all inside it. The ecology is the only one that can contribute to the platform itself. It is an ecology that is focused on itself, but it has no awareness of anything outside. The outside is considered by designers as an immediate threat. Most platforms are run by creating some kind of lock-in situation in which the attention economy can be optimized. There's never an end to the capture of attention. The system will never say: 'ok, this was enough attention for us, enough advertisement revenues, goodbye.'

What did the idea of the network mean for you and for earlier Internet researchers? What can you retroactively define as its weak spots?

There's certainly a naive phase in the development of the network rhetoric, more or less from the late '80s to the late '90s. The dotcom crash and 9/11, combined with the takeover of venture capital, led to a new form of what we could call realism that resulted in Web 2.0, and then the victory of the platform logic. We can still distinguish between the two. Some say that the tipping point only came after the mass introduction of the smartphone in 2009-2010. The term was, and still is, completely nonsensical because we're not talking here about the media definition. Social media are strictly speaking not media. It was kind of a catchy marketing term. Social networking sites, yes, but that seemed too vague.

The platform concept was, in that sense, much more precise, technical, and less fussy. The social media that we're talking about here were funded earlier because they're products of the Web 2.0 era. But like everything it took a few years for them to mature, roll out infrastructure and reach a critical mass, especially on a planetary scale.

How do the political form of the network and your notion of tactical media relate to platformization?

There still is the idea that there are networks possible inside the platform. It is not like the platform intends to eliminate or overcome the network. It absorbed it, literally. Internal connectivity between users is still something, otherwise we could not like, follow or retweet. It would not be honest to say so. But the network logic only exists inside the platform, as the platform has no concept about this outer world, it doesn't really matter what's going on

elsewhere. The platform subsumes, absorbs and appropriates the network as autonomous units.

Mark Zuckerberg distinguishes between communities and networks. In our understanding back in the 1990s, these were more or less interchangeable concepts, because a network has a technical understanding, yet there can also be a technical network without a community. It is like saying: 'we built the network, but there are no users.' That doesn't exist, right? Implicitly, there's a network of networks, and the network is also a collection of communities. They are sometimes small; sometimes the communities also literally take the form of a network. But that's not always the case as communities are themselves not by definition networks, they can be a group, a collective, a co-op or a tribe.

The community is the product?

Of course. But it also means that without the community there is no product. We need to reverse this logic. Companies need both community and networks. It has always been like that, especially for Facebook/Meta, but now also for TikTok. Still, up to today, Mark Zuckerberg cannot think of what he built as just a collection of lonely individuals. He talks about family, friends, businesses and sports clubs. He sometimes calls them community, sometimes calls them networks.

I am curious about the semantics of the term network, because it is a bit similar to the platform in how it was used. It once had a political implication. But was it also an epistemology, as in Actor Network Theory?

Not really. Networks are a weak form. They are constantly hovering between the solitary and the social. For us, the idea was that you could build networks yourself: DIY. They may exist in society, they may have existed in history. There are networks of power, networks of finance, and of course, there are networks in nature, like plants. The rhizome is part of that discourse. We can detect them, and we can see the nodes and we can see how they grow and interact.

But for us, the main issue was that the network was a democratic, decentralized alternative for the disasters in organizational terms of the 20th century - as defined by the political party and, in particular, the Communist Party. Networks negotiate the relationship between individual and collective freedoms in novel ways. That was the promise. They also provided an alternative to societal constructs like the family or the church, all these large very restrictive forms of the social. We asked: can social hierarchies and power be broken up and replaced by a more vertical, more open, diffuse form of organizing social life? And so the network then is at times both sociological and, I wouldn't call it drawing, but a structure, a..

Form?

Yes, definitively form, aesthetic, while at the same time technological. This defined our age, because we strongly believed that there is no form of social life anymore without mediation, without the technological aspect. And the idea that there would be a true form of social

interaction outside of the technological range is nostalgic. It's a nice dream but it no longer exists. We can discuss how social relations were a few hundred years ago and it may still have existed in its pure forms in some places. But the fact is: the social is a techno-social network.

With that logic, in five or ten years' time, you suddenly wake up and then find yourself in a quite rigid structure, a cage called the platform. Inside the platform, the network logic may still operate, but the platform's aim is to put as much effort as possible into preventing you from leaving. In that sense, the platform is the post-disciplinary 21st century version of the school, the clinic and the prison.

Another interesting thing is the similarities between the network and the platform as metaphors. What would you pick as a metaphor to describe the platform?

First of all the elements of convenience: speed and proximity. It is important to have a sense of overview and control. You are controlled, obviously, at the same time as you are surveilled. But everything is personalized in an intimate, smooth way. If there is something that made the platform so powerful it is user empowerment, in line with the 1960s promise of the liberation of the individual. The rhetoric where I come from is one of web design, of user experience, of interface design which is open and flexible, something you can experiment with.

The platform logic is not one of brutal submission but of intelligent service design. And then, one day you wake up and find that you cannot change anything anymore—and that's when you feel stuck. One starts to sense the capture mechanisms, and all the subconscious tricks start to implode and affect the mental state. We start to feel used. This is a strange flip, an inversion, often sensed in a flash. This is a moment of awakening or reconciliation with a world in which user experiences are steered by invisible others that are doing this in a very detailed and subliminal way. The paranoia kicks in.

In a way, this is the opposite of the open experiments that we did in interface design in the decades before, which were so creative, weird and maybe also dysfunctional. Sometimes it was on purpose, to confuse and derail the users. In the user interface design there are always two schools: one wants to optimize this experience in such a way that you no longer see the interface. It's so smooth that you don't notice it anymore. And the other school is obviously more artistic and asks a lot from the users. It takes them and sends them in wrong directions and kind of expands the mind.

Are these pre-defined choices part of the platformization of infrastructure?

Yeah, but it also means that they can no longer change. If they change they do it in subliminal ways - in a way that we do not notice. At least, not visually, because they change every day, and contents are changing every second. But the structure is not. That's something we did not do as a first generation. Let's say you did not foresee it because we thought that there was some kind of natural law of innovation. The same as taking Moore's law and then applying it also to our field: not just the capacity of the chip, but Moore's law itself became the metaphor for the ever-changing nature of these technologies. There we made a great mistake.

That belief kind of stalled somewhere in the 2000s - around 2005-2010. I would like to strike here that the historical process of 'platformization' is over, in the same way as 'digitization' was finished years ago. Computers have been with us for 70 years. Of course, certain bureaucratic procedures can still be further optimized and automated, but it would be politically wrong to portray Western societies as innocent victims that are only at the beginning of these transitions. The platform as an institutional form is done, over. We know its shape and size. It is now our task to search for alternatives.

What about now? Have you embraced accelerationism?

Well, I see it as a given. When you buy a phone, all your apps are already there. In the past that would have been unthinkable. How dare you decide what I'm going to use!? I will choose my own operating system. These defaults were considered a gross violation of privacy. But nowadays everything is already there, it is plug and play - within a few minutes you can go. I learned a lot, early on, from the philosopher of speed Paul Virilio. For him, acceleration was already over once we started to compute and communicate at the speed of light. All the rest was societal adaptation. His position is quite different from the accelerationists (I would not even call it a movement or a school) that emerged about a decade ago. Accelerationist alienation will not flip into the enlightenment of the online masses. Most likely it turns into rightwing populism: violence against others.

Is this why you study platforms nowadays?

In a funny way, platforms slow down the feeling of speed. Once you're in it is like hovering, floating in space. There has been a change in my understanding of it. I don't enjoy spending time on platforms. I think they're tragic and gross reductions over anything that was once possible. It is tragic to see that you can do so much less in comparison to two decades ago. Why would that be and why would we embrace that? But then I started to see it more than most users. It is a given, and I can't change that. Most people are not gifted Linux programmers, and there's a certain sadness as well on that part. The open source, free software, open knowledge, and commons ideas should have been common today, but they did not deliver. Something happened along the way, the moment they were about to blossom and take over, and it really set the standard for the possibility of changing the course of the web in the other direction. The promises faded away and things got compromised.

That was also a sad moment, and it goes together with the realization that most users - because they can't change the environment and no longer have a grip on the tools they are using - experience feelings of melancholy, anxiety or anger. I zoomed in on what I called 'sad by design.' A feeling of loneliness, or even worse, a form of mass depression. This is what happens when you put people behind virtual bars in enclosures. We should not be surprised.

Right there we have a strange dialectic, because you could say: 'it's the society that makes people depressed; then they go to social media and they become more depressed.' Where to locate the problem? That's always a strange carousel, there are so many feedback loops, things go in circles. Often people ask me: 'is it social media that makes me depressed?' You

will never know the answer to that question. First of all, we start with the presumption that there is no more difference between the smartphone and society. We wear it on our bodies. We take it to bed. It's never been so integrated as it is now.

In this sense, it really is a medium as an extension of the hand. What do you think about the improvements in the research of these phenomena? Is there a better conceptualization now?

Exactly. The conceptualization has changed. There are fantastic schools where you can study theater, film, television, art history - they all have chairs. That is not the case with internet studies - at least not yet. Internet turned out all and nothing, a utility, not unlike electricity and water. The term 'new media' was a bad omen. Luckily, the term vanished but nothing replaced it. Forget digital humanities, which is only an internal academic matter to bring disciplines such as literature and archeology up to speed. Some countries are making progress, but still, the gap between the cultures of use - close to five billion people at the moment are using the internet on a daily basis - and the research that reflects on it is immense. I always wondered in whose interest this is.

Despite the lack of theory, we are quite aware of what's going on. In that sense, we made a lot of progress. There's an enormous debate, and different methodologies, theories and approaches. But compared to the culture of use, it is tiny, tiny, tiny. Even budget-wise. I wouldn't be surprised if the world spends 10 times more on film history than on internet research. Look at Italy. The crazy examples you have about the amounts the Italian scholarly community puts into research into the renaissance... that's sad. If we would only have 10% of that Renaissance money put into internet research, with all the brilliant Italian researchers in our field, that would make a huge difference.

There would be an Internet renaissance!

Exactly. We can laugh about it, but there is something deeply tragic about this. I have not been able to fully grasp the range of missed opportunities, especially from a European perspective. I'm not saying that nobody's doing platform research - I think this book about the Amsterdam platform research that you are putting together proves the opposite. There is a very rich and diverse local ecology here that we can all be proud of. However, it is absolutely tiny in comparison to the sheer size of the internet, right? We are talking about gaming and cyber-warfare, about platformization of e-commerce, during and after COVID, the whole debate about Zoom and the future of online education... the list goes on and on and on.

Why do you think that Amsterdam turned out to be the epicenter of platform studies, in comparison to other bigger cities?

Amsterdam used to be a small, quite free, liberal town open to experimentation (until it became completely unaffordable and thus boring, 5 years ago). It's even smaller than Frankfurt. There's something good about that because this creates ways to interact between different disciplines and backgrounds, whereas in a large city where people don't know each other, they will never meet, and the chance that there is a meaningful exchange between

different methods and theories is not so likely. It is true that the bigger cities in Europe have all failed.

Since the '90s, Berlin is the only city that has had a meaningful lasting dialog with Amsterdam. There was never any possibility that one could go to Paris to get new ideas in terms of internet research. This is still not the case—and that's tragic. We never felt superior to Paris; we were simply disappointed. How can they be so out of touch? We didn't understand why they were asleep. Busy with other issues, for sure, but why didn't they see what was emerging? And they still don't see it if you go there now. Why don't they discuss the big urgencies of our time, like the Platform Question?

Regression and stagnation are widely felt, especially in the capital cities. This then gives opportunities for somewhat stranger cities like Amsterdam that are a bit more odd or singular to thrive. But also, it means that there is a lack of money. As you maybe are now aware, Amsterdam is not the seat of government. Instead, there's much more of an idea of self-reliance or self-organization, a shared need for building networks to the outside world.

Talking about imaginaries, your trust in the future seems to be fading. Do you see platformization lasting? What are our possibilities for changing the platform model?

Already 20 years ago we concluded that European regulation would be necessary. However, with the lack of speed, it is difficult to understand the urgency. The regulation would always come five, ten or fifteen years late, when it no longer matters. We have experienced that with earlier examples of IBM or later Microsoft. Is the regulation of Microsoft our first concern? Well, I would say no. But in the pace of things, this is kind of where we are.

This is a real issue: regulation will only regulate something which is no longer critical. It may still exist; it may even be bigger than it ever was. I'm not saying the European Union is only regulating something like a phantom, something that has already disappeared. The problem of the regulation school is that it has not been able to deal with the acceleration. Maybe it is an ontological, structural impossibility. I'm not really sure.

I hope others - also in this book - will be able to do better and more deeply reflect on that now, because this is the current challenge of the platform regulatory approach. From a political and strategic point of view, the question would really be if in a legal sense it would be possible to regulate platforms five or ten years faster. In general I have a sense that if we do not act in the coming years, much larger and urgent issues will take over.

The idea that the digital infrastructure should be built according to certain legal principles also stumbles on the complexity of the phenomenon to be regulated. There are so many variables, and they are also changing.

If too little-too late regulation is not what we once thought it was, and if that's no longer a viable option, the question then becomes: should we continue with our strategies of the past decades? Which are things like free software and open source. One example is that we build

parallel alternatives in the hope that one day either the dominating structures tumble and disintegrate, or are closed down because of their criminal nature. Or can we imagine in some kind of weird free market situation that our alternatives even become the better ones? That hasn't happened. We were in an absolute mood of despair around 2011-2016 when platforms consolidated their power. Back then, there were hardly any alternatives. The existing ones stagnated, and the tech community refused to deal with the petty world of ordinary users.

Over the past years, we have seen a rise of alternatives. There is a little bit of hope, from DuckDuckGo to Discord, Signal and Telegram. But it also meant that in five or ten years' time, when the platforms will have become even more dominant and invisible (in the sense that they are part of life for ordinary users) they cannot be questioned. People simply use them for their work, their social life, family, or whatever they are forced to use them for now. Alternatives have thrived, but the fight between the existing platforms has become almost impossible to win. It is not even anymore about user-friendliness, speed, or convenience. All the demands that ordinary users have can be fulfilled. But the fight against the platforms consolidators cannot be won.

Your notion of platform nihilism pointed to the permeation of platform logic in our collective unconscious. Is it still so?

I wish I could be more positive here, especially when it comes to the mental state of young people and how social media interacts with that. We shouldn't underestimate the sheer number of young people worldwide. They are absolutely crucial for the further development of the internet and related topics such as AI and The Metaverse. However, we also have to put this in perspective with the much larger crises such as climate change and the loss of biodiversity. The list is long, from housing to the growing income gaps. There's an absolute sense of urgency there. It's all interrelated: the stack of crises. As we know, the platforms will never allow people to properly organize themselves. This is not going to happen, there will be no Arab Spring 2.0. In that respect, I am skeptical about it, because the use of it is simply against all forms of collective action.

Organization will happen despite the internet. As soon as collective action happens, you have a problem with the provider, the telcos, the platform, all owned and controlled by the powers that be. No matter what you do, no matter what your political signature is, the digital is catered to individual users to keep them isolated from others. This is the design of these platforms; and we also cannot imagine a world in which - especially with these generations - platform design will simply be left in the naive '68 generation's thinking.

There was still a time - 50 years ago - when people thought of antagonisms, absolute and objective differences of interest. For instance, in the class society there was a conflict between generations, between the generations that lived through World War II and those born afterwards. Sometimes this would even express itself as a real struggle. But this idea that there is an objective antagonism is no longer the case. I have always naively thought that the next generation would just rebel and think: 'the internet is the source of my misery, it is boring Facebook, Instagram, TikTok that is the cause of all our societal problems: let's get rid

of it.' This position is now completely unthinkable. Probably the previous generations before me would, even more, think that there would have been a revolt of the generations. This is the real driver of platformization.

Do you believe that McLuhan's prophecy that technology re-tribalizes man is in fact more justified now? And talking about platform and care, can we think of infrastructure that enables care relations?

As for tribalization, if it means being kept in place, knowing the role you need to play, with platforms assisting, guiding you, but also telling you that this is where you are, then this is your social network. And there is nothing else, right? Then I would say yes, that is very true. This is the experience many people will have. Unfortunately, it is accurate.

As for care, for me, it will also always be personal care. Is there something like abstract or automated care? The question you are posing is: can AI care? I would say yes, but only if the AI is there for you, with you, next to you, in you. Otherwise, no. The idea that, because it is software, it cannot care for you, I do not buy. But that's not the point. Our critique of platformization should not go against abstract systems. That's never been the point. It's in the end always about, for instance, the redistribution of wealth, income and attention, not about a critique of abstraction as such.

In the Netherlands, there are many discussions about public values and infrastructure design. How does that relate to happiness?

Regarding happiness, we need to reassess the role of optimization. One could say that the Silicon Valley model is based on the idea of the optimization of surplus value through personalization. Facebook, aka Meta, is a good example when it comes to the extraction of value from negative emotions. Can we design systems where this extractionist logic has been put out of order or sabotaged or put aside in favor of something completely different? How do we dismantle such knowledge? Can that be done top-down? For instance, in the Cybersyn model, was there a possibility for workers to also be in control of that system?

That's precisely why Cybersyn was an interesting failure: they tried to give control to workers and to involve them in building the system, but existing class prejudices and the political environment prevented that from happening. Can stacktivism resolve this tension?

Cybersyn failed, and we know why. Taking that into account, it still means a lot that we need to start to experiment again with bottom-up designs because we don't have many of them today. We have no idea. The only thing you can see is top-down. We can figure out time and again what works and what doesn't work. Bottom-up approaches rarely happen these days. This also means that the level of sustainable self-organization is at an all-time low.

Stacktivism is definitely one approach to overcome the legitimate form of platform critique that is going nowhere, because it cannot really express itself in political terms, due to the limitations of regulation that we discussed before. The current platform critique doesn't know where to

go. Confronted with machine-generated mental poverty, it fails to offer alternatives such as an algo[rithm]- free life. In that sense, when we say that we are stuck on the platform, this is a serious condition. Stacktivism means that one knows that deep infrastructural changes are possible, and that we can at least try to dig and uncover the abstract and invisible workings of technology on levels that very few people know or have any access to. Not even politicians, not even CEOs. To understand the real complexity of the power structure in a stack in which there are levels of bureaucracy or complexity of standards and protocols - that we have very little awareness of.

The stacktivism tells us that tech may all be very complex and difficult, but also easy to change. I am of the opinion that stacktivism as a driver of internet revolution is a hundred times easier to achieve than the challenges we face in the context of climate change. We can change code and protocols - and know how to do it. We can change the infrastructure and technology because, in the end, it is fluid: the code can be rewritten. It doesn't need five to ten years to be done. I'm not saying it can be done overnight, but it can be realized fast in comparison to other issues.

I have to think of Morozov's accurate description of techno-solutionism, his warnings, and the countless examples we can find of it in our immediate surroundings. This leads us to an important warning: if there is a problem, we should first of all prevent - or at least postpone - technological solutions. Here in the Netherlands we have a similar impulse. It's not a technological one, but for outsiders, it's always very clear: when Dutch society deals with a problem it comes up with a spatial solution. I would like to have a serious break of both. We need data prevention. Let's celebrate the coming moment of peak platform when overcrowded systems implode under their own weight. That's the moment of exodus.

Further Readings

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Fig. 10: Platform as a Shopping Mall

POLICY BY INFRASTRUCTURE: BETWEEN MATERIALISM, FAITH, AND MAKE-BELIEVE

INTERVIEW WITH NIELS TEN OEVER

Niels ten Oever is working at the media studies department of the University of Amsterdam. His research focuses on how norms, such as human rights, get inscribed, resisted, and subverted in the Internet infrastructure through its transnational governance. Niels also tries to understand how invisible infrastructures provide a socio-technical ordering to information societies and how this influences the distribution of wealth, power, and possibilities. I have managed to interview Niels only after some attempts: he initially refused, as he would not describe himself as a platform researcher but, rather, an infrastructure one. But platforms need to be understood in infrastructural terms, and those two areas are deeply intertwined. The interview took place at his cozy apartment in Amsterdam West on a rainy day, with some breaks for coffee and orange juice. It lasted for more than two hours. As we progressively figured out a common interest in religious topics, the conversation diverted to the relationship between infrastructures and faith.

How would you describe the role of infrastructure in communication and information technologies and digital platforms?

I will depart from the work of Paul Edwards and the book *Your computer is on fire* and especially the chapter *Platforms are infrastructure on fire*. Platforms are infrastructure but with, as Bergson would put it, less *durée*. They come up quicker, they build up a quicker role and that changes the way how things organize. With Keller Easterling, we can say that generally, infrastructures set invisible rules for everyday life. Platforms, because they are on fire, they are doing this more visibly. That's why platforms attract a lot of attention. Sometimes I feel they are a bit of a lighthouse: there is a lot of light, but I am not sure there is anyone at home. What is the material of the platform except for the perversion of the idea behind it?

When we are looking at the internet, I start thinking about the telegraph. For a too long time, I thought of the internet as a discontinuity. But there is also a lot of continuity in discontinuity. Let's look at the situation of the telegraph: in 1865 the first international cable, then the establishment of the International Telegraph Union. In the USA it was a total monopoly by the Western Union. In Europe, the governance of the telegraph was nationalized and controlled by states. Just like today we see very similar regulation strategies and questions of compatibility and control, and the relationship between capital and technology, continuously reconfiguring each other.

We are here in the Netherlands, which has been produced by the Dutch East India Company. The history of Amsterdam is a very Dutch story: they build a dam in the Amstel River, and

everybody that wants to pass needs to pay a tax. That money brought employment, they built houses on the swampy ground. To build all the warehouses they needed more places so they built the canals so that boats could go through. The canals you see are not made by the government, but by a multinational corporation. In this way, you see how space is ordered by capital. We see the same with communications infrastructure, but we should not be naïve. We cannot say it is just capital.

When I was working for the NGO *ARTICLE 19*, I was at the International Telecommunication Union (ITU) plenipotentiary meeting. I wanted to go there, but you could only participate if you are a member of a delegation, so I asked the Dutch government to join theirs. They asked me what freedom of expression NGO had to do with telecommunication standards. They saw telecommunication standards as a matter of economic affairs. That is really interesting. I got into the delegation, I was then part of the negotiating for three days, and the person I was negotiating with for three days turned out to work for Microsoft. I worked for civil society, so I thought: we really have hollowed out the state! Even in a multilateral platform, the actors are civil society and business. But later I thought that actually, the state regime let us work for it. It does not need to do the work; they just need to be there.

When push comes to shove, states are the final norm-setting and rule-setting authority. There is this thing of time, where the state always has the longest duration and diplomats are very aware of this. Whereas capital can come and disappear. Just like the market value of these financialized companies that have hardly any backing in reality. Weirdly, this has also happened with telecommunication companies: they became real estate companies and even the management of the network has been outsourced to equipment providers.

What has happened to the infrastructure is that it has become very opaque. There used to be a protocological logic that would kind of make sense of it, it would explain the interlinkage between the heterogeneous networks, where everyone could do whatever they wanted. But we see now in this turn and also with the rise of 5G a “telecommunification” of the internet, similarly to what you saw before, and internetification of the telecoms. That is quite interesting, and I think you could even call it a platformization of the infrastructure.

This reminds me of the great work by Plantin and others, where they pointed out the double movement of infrastructuralization of platforms and platformization of infrastructure. What metaphor would you use to describe this kind of infrastructure? When infrastructure works are invisible, so only when Facebook goes down, do we realize that there is something behind that interface.

It is funny that you mention the outage of Facebook, and then tie it to a political explanation. I might need to correct myself to what I said earlier: even when infrastructure doesn’t work, people don’t think about it! We now had several CDN, DNS, and BGP¹ outages and if you would ask any person about these three abbreviations, they wouldn’t have a clue. Neither of the companies such as Akamai and Fastly. None has heard of these companies. They

1 Content Delivery Network ; Domain Name System; Border Gateway Protocol.

cause a lot of friction for some people, maybe even significant economic costs, but they are not visible.

Metaphors have got us into trouble. Julie Cohen wrote in her book *Between Truth and Power* that it is not for nothing that we are not talking about the electronic superhighway anymore: we are talking about the Cloud. Why do we do that? A road has rules, but a cloud doesn't have them. Where we are now is much more of a fog. That's what comes about with smart cities and arguably with that what Seda Gurses calls 'programmable infrastructures'. The question then is: for whom is the platform a programmable infrastructure? The user is being excommunicated from the infrastructure. The programmable infrastructure is the facilitation of the programming of the user. Platforms are just an in-between stack. In that sense, a platform is a very literal stepping stone.

The shift from user-center design to the design of the user. But that may be the reason why metaphors are so important. For me, it's more about choosing fair metaphors than getting rid of them, which is impossible.

Exactly. The platform still has friction because you need to go there and be distracted, but what if you don't need to? This is the dream of people like Elon Musk. This non-material dreaming is what got us into the problem in the first place. I would go here with Fanon: we need to be radical to unmask the power relations behind these metaphors. Sociotechnical imaginaries - and the language of imaginaries, from Castoriadis and Jasanoff - Science and Technologies Studies (STS) has been really good in showing that there is power in technology, but it provides very little to actually explain how that power works. That's not enough. If we dream up a new future and not come with an economy, a practice, an institution, or everything that comes with it, it will just cause the legitimization of a regime. We should talk about network ideologies because we are pretending they are not there. STS has done a lot of work to hide its Marxist roots.

These network infrastructures and platforms have been the commodification of the infrastructure that was designed by the state. If we want to understand their production we need to understand the practices and ideologies and institutions. With Althusser, ideologies are not between your ears but in practices, institutions and discourse. This is the difference between imaginaries - that is between your ears - and then help produce practices and collaboration, and ideologies that start from the practices that are continually being inscribed. Here I definitely say: we need to look at how the system underpinning inherently relational infrastructure - infrastructural ecologies if you will - it is a libidinal economy.

How did you start your interest in infrastructural matters?

Two events were important. I come from a very protestant background, but I lost my religion at a rather early age because the clergy could not really provide answers to rather simple questions. I was very interested in reading, and I took the word very seriously. I was looking for words. When I connected for the first time with a bulletin board system, with

the computer we were connected with the hypnotic sound of the modem and the screen would build-up line for line, and there was a menu.. we really didn't understand what we very doing, what we were typing, how to navigate. Then all of a sudden, a prompt showed up that said: 'you really don't know what you are doing, do you?' It was almost like it was the word of God. This machine has a voice!

This recalls what Gibson said about computers: we should baptize them because they have a soul!

You have to know that bulletin boards used to have a limited number of lines – only a few people could call in and do their stuff on the system at the same time. The system operator probably saw very little activity on our line, and he was like: what are you doing? This instilled in me an acute awareness of surveillance, guilt, access, and limited resources. There's a world you want to explore but you don't understand. So that was one very influential moment.

As I started to read computer literature in trying to understand what was this thing behind the screen, relatively soon I got to Request for Comments (RFC). These RFCs are standard documents and other official documents that come out of the Internet Engineering Task Force and affiliated bodies. The name is quite misleading because if you comment on it, you should do it before it is an RFC. Once it is an RFC is too late. For me, the RFCs, and their esthetics, became the networking bible. Some people write about how this network of networks functions. They don't even write the code; they write how the code should work. For me, this was this very biblical instruction on how you should live. I had this inherent interest in networking and technology and how these things work.

But for quite a while I studied philosophy, I was very involved with activism, and I did not think a lot about the internet. I similarly study the internet as one could study literature, architecture, or public space. It is an imprint of power relations and understanding of our time. When we study the internet, we really study geopolitics, and economics, and I try to come up with a non-technological deterministic model to understand it, but in a way that we can generalize something, learn and do something about it. I just try to keep on circling around the infrastructure and drink that cup to the last drop.

The relationship between technological infrastructure and religion is extremely interesting. I also come from a religious family – a catholic one – and some things continuously pop up. For instance, the very categories of the state are structured as religious categories. Digital platforms are political theologies. I also remember this passage by Kuhn; he was asking: what is driving the shift from one scientific paradigm to the other? It is faith - the faith of the scientist that he will explain things better.

Very much. No one fully understands the internet or computing. It works in ways that we have never imagined, and the 'we' here are the different 'epistemic communities' that work on it and produced the infrastructure. But through this work, they have also become a particular kind of believers. As the work of Corinne Cath shows, these people are really

thinking they are on the right path because they have blessed the world with such a nice working system that brought so much to it. The myth exists that this is not because of privilege, power, and public money but because of what these ‘experts’ in the Internet Engineering Task Force (IETF) have done.

These communities have their own rituals, and when you go to an IETF it is almost like a meeting of modern druids. It is mostly old white men with beards. When they need to make a decision, they hum. Imagine 1500 people that do: “Hmmmmm”. When they talk about numbers, it is very ritualistic and organized. So when we talk about the technical, these institutions, engineering cultures, are an inherent part of it. Some things are ‘organized in’ and things are ‘organized out’. When you interview the people at the IETF, I am always surprised that they have very similar values. They keep on repeating that there are three values: end-to-end principle; permissionless innovation; openness. But when you actually look at the standardization process, these principles are not undergirding every decision. Other norms are not being expressed that undergird them.

This is how the sociotechnical imaginaries help to legitimize a regime, but actually not structure it. It is only covering what is happening underneath. Maybe sometimes it has been the case, but people like Sandra Braman have shown that ethics, societal impacts, privacy, and security have all been discussed in the early phase of the internet by the people who built it. It is just that these things were never prioritized because there was no incentive for them. Sometimes people say: at the beginning, we did not think about security. No, you just did not think it was important enough! It is written down. Sometimes people say that the internet is a global network of networks, but when Ramsey Nasser wrote an Arabic programming language, he called it “engineering performance art”. I asked him why, and he said it was because it will not work. After all, the internet and programming stacks reject every non-Latin script on a fundamental level. So this global network of networks speaks the language of the colonizers. This is why people that don’t have a Latin script cannot have an email in their own language.

Now we are back at platformization: the computational architecture rejected non-Latin scripts, and that led to the rise of platforms that allowed Arabic and Chinese characters to be typed. That then led to a re-design of Chinese architecture, because the architecture in the rest of the world simply would not be useful for their country – they needed a huge autonomous system – the networking software we have here simply won’t allow for that. We in Europe and the US still think we are the tip of the spear; we really think we are at the top of development. But others don’t want to follow along, and usually, our solutions are not the best solutions for many different places.

Would you then say that these very uniform epistemic communities have designed these communication networks as a reflection of their values?

Yes, but I do also think that ideology is interesting because you kind of know but you don’t really know. People profess permissionless innovation and openness, but they know it is not true. They also know that this is the language of our church. They know what to say and

they say it. That's a story they keep on telling and that's also how they keep it together. It is also for fear that it might come apart. So the design of the infrastructure and architecture has become conservative and has been almost frozen in time. Other people have other logics that are not compatible, or incommensurable.

But then I wonder: if the first rhizomatic imaginary of the internet is gone in favor of a recentralization, how do they cope with it?

Before I answer this part, I have to go back to the first part. In the beginning, the network was a tree and not a rhizome. That imaginary came only at the beginning of the 1990s. Engineers worked on interconnected networks from the 1970s up to the end 1980s, and it was governments, funded by the ministry of defense, with backbones and a very clear Acceptable Use Policy that said: no commercial traffic on the network. It was just a bureaucratic project – a super interesting one, but that is what it was.

The way the Internet got spawned - if we want to pinpoint a moment when was the internet invented - then I go back to October 1957. It is the launch of the Sputnik satellite. What *The Times* called those chilling beeps that could be heard everywhere around the world by radio amateurs and states alike. It said: this is the technological and scientific supremacy of the Soviet Union, and this is what spurred the Americans this decentralized and distributed network that could withstand a nuclear attack and was very resilient, and put a lot of money in this semi-cybernetic information science. Only when the Soviet Union was beaten, they transformed the Interior Gateway Protocol (IGP) into Border Gateway Protocol (BGP). They made it that commercial internet exchanges would be possible, and the state did not necessarily need to maintain the backbone. Then and only then did the real commercialization and privatization of the internet happen, and that's when the public history begin: it was distributed, decentralized, and there was this huge boom.

These were people that were not popular at parties, and they become geopolitical actors all of a sudden. They had a belief system and they wrote it down and they made it work. As Fred Turner shows, this was inherently militaristic, and counterculture and capital were all complicit in the production of this culture. The guiding document of the IETF is called the Tao of the IETF, so the religious, or cult-ish if you will, roots are not even hidden. This is rooted in an idea of the technical sublime.

There is really this infrastructural move going on that is two things at the same time. One is to provide people with more information, faster, so with lower latency and higher throughput. With that, we are running into the limits of physics. If I want to get my Netflix video and I want to get it from a server in the USA, there is going to be some friction. That video needs to store closer to me. The closer it is the faster it can be served. That led to the role of so-called "content distribution networks". Now when we think we are connecting to Netflix, we are not connecting to a server in the USA, but rather to a server that is close to here. This is what allowed the internet not to go down during the pandemic, when everybody went online all of a sudden. That is because the pressure on the backbone didn't increase that much. After all, a lot of the large content was already stored close to

us. That is why we need all those data centers all around us. But they are ugly, and they also use a lot of energy. This is now becoming part of the discussion.

What is now the move is that they are going to put the data center underwater. This is a classic infrastructural move! To take them out of sight we put them in the bunker and we think it is exciting. There is this connection with militarism, of protection of the most valuable things. What we put really deep underwater are the things that we fear most. It is not for nothing that Jesus walked on the water. This is also with the submarine cables; they all speak of something that we cannot see. That is how power got organized: the telegram network called the *All Red Line* connected the whole British empire and it transformed Britain from a colonial to an imperial empire. It allowed London to be the center of power of the entire empire that topographically was never to be controlled but topologically it was completely formed through communication networks.

Now we see the rise SDNs that provide more data closer to use, we see a restructuring of the network with this platformization of the infrastructure, where is not only content buffering but also computation. Right now, if you connect to the network with a traceroute and a Packet Internet Grouper (Ping), you can have a bit of an idea of where it is connecting to. I know I connect to my wi-fi, in my home, there I have some filters and some semblance of control. With the rise of 5G, what we see is a lot more antennas that are implemented on general-purpose hardware. Previously, a lot of these modems and switches used to be implemented on logic gates. Now processing speed got faster, memory got cheaper, so it is all implemented in general computers. This means that is very easy to reprogram the whole network and algorithmically optimize it. It can be used not just for routing, but also for the computation in the network or to localize computational assets in the network.

That means that if you listen to a podcast in the kitchen, and the closest computational asset is the fridge standing right there, why would that podcast not be already buffered on that fridge? That is only talking about data, but what about computation? If you are making a movie, why can't it be rendered on that fridge, if there is some much computing power all around? How it is most easily done is that everything is connected by default to a centralized network. This is what is going to happen with embedded sim cards. These plastic things are not needed anymore, everything can be connected by default to the network, and the 5G networks can allow for this enormous number of devices to be connected. Here we are back at the programmable infrastructure and the interfaces it provides to organize this kind of cognition and computation. That is how computation really became embedded in our environment.

And what are your ideas for the future of this digital infrastructure?

We need to develop a network ideology. I want to know what is society, what is bureaucracy, what are institutions, and what checks and power we need to realize it. That doesn't mean that we cannot dream about it, and I do think that Bastiani with his *Fully Automated Luxury Communism* has a point. We need to bring the joy back, but sadly he does not provide a theory of power with it, which is exactly what has caused technology to become what it is now. A lot

can be learned here from the decolonialism and anti-racism struggle, when they talk about “black joy”. This is maybe something that cannot and should not be celebrated by everyone. There is this prevalent idea that everything should be accessible and interconnected all the time, but I think that a lot of freedom should be not interoperable. There is a lot of freedom in non-association and group privacy.

The question should be: who can decide what is interoperable for who, and how can we meaningfully reconfigure our subjectivities to do that? In short: we need to ask ourselves what infrastructure we want. What we currently do now is depart from what is possible instead of what we want. What is possible is very determined by marketing speech that has very little to do with how the technology works. I would even argue that marketing speech about 5G is what has led to 5G Covid conspiracies. The marketing of 5G was so bad and so empty, but at the same time, there was so much talk about real changes going on with 5G that the discontent led to a space that was not filled up by governments or by providers, but by conspiracies. No real information was provided.

We should be brave enough to ask what infrastructure we want, what infrastructure we need, and what infrastructure we deserve. What are the biggest issues of our time? Rising inequalities and environmental issues. We want technology that helps us work on that. We need these companies not just to work on corporate social responsibility. That is why I was very happy to see the recent legal case that held Shell accountable for human rights violations against future generations. They gave Shell obligations that are normally held only for nation-states. This is what we should do to these companies as well. For that, we need to hold their feet to the fire, but we cannot outsource our desire, as we do now. How can we regain our desires? There was this moment, really early during covid, where people were asking: how do we want the world to look like? Then this boring apocalypse set in. What can be an ideology that is sustained through institutions, technology, and infrastructures? What are the infrastructures that can underpin modern democratic information societies?

We shouldn't redo the debacle of GAIA-X, because it was asking the right questions but had very much the wrong methods. It asked: how can we have a European Cloud? The problem with the concept of European Cloud is the two words: European and Cloud. But I do like the idea. The Cloud is the language of marketing companies, they got to set what they wanted. If you want to design something new that does not name it after the old. Where we are now with Europe is that when we say European values, that is in some of the most critical cases against the European project. The most attention goes to building up borders and building a fortress in Europe, and not building international solidarity. It has become very very cynical. Then I much rather say – with Saint Augustine – that the true faith is in doubt.

What do you think of Project Cybersyn, and generally of socialist cybernetics as a way to overcome socialist centralized planning? For instance, Stafford Beer tried to focus on the worker's happiness.

The problem – and this has been best explicated in the BBC documentary by Adam Curtis and by Benjamin Peters in *How not to Network a Nation* – is in the logic of the system or the

underlying onto-epistemology. It is that the world is quantifiable. When we quantify, we are not representing, we are creating. This is also a Foucauldian move, right? We are forcing a kind of happiness or realization of happiness on workers when we continuously quiz them, if we are asking them to choose happiness, even if it is anonymous, how can we get anonymity in such a population, and what are going to be the repercussions? It is not an innocent system. The two traps are the conception of anonymity and the meaning of happiness. This is what terribly frightens anthropologists when data scientists try to capture things in numbers: it is always inherently more complex. You try to flatten society through quantification and you are shaping it in a certain way and making it manageable. It is almost like creating a ground, plowing it to be manageable. I think that life — as we all know through our individual experience — is unmanageable. Out of the fear of lack of control over our own life, we want control over society.

There are a lot of risks involved in quantification and how people react to that. In a *City is not a computer*, Shannon Matters writes about Cybersyn. Do you know the image of the control room with the chair and the dashboards? All those dashboards were not computerized, people were running behind them. So we render people and their labor invisible. This is a shiny interface, and the workers wouldn't even agree, they would be happy and unhappy for different reasons, but it is never simple. This whole dream that everyone should always be happy is also inherently repressive, right? I think it is people that should try to colonize their own swamp. We don't want either the government or corporations to do it for them.

It is true that the case of Cybersyn shows that, despite them really trying to involve workers in the design of their technology, ultimately class prejudices and geopolitics prevented that from happening. But do you believe in regulation by design and standard setting?

My work has been a lot on standardization. This is often called multi-stakeholder governance. This has been pretty much shown to be a myth: it is largely industry self-regulation. But I am actually not sure that is a bad thing. Standardization is pretty complex. It allows or facilitates the collaboration of competitors. That is pretty weird if you think about it. There are markets in which it worked well — such as the internet — and there are markets in which it worked really bad, such as electrical sockets. That's why when you travel you need to bring the international adapter with you. That's a moment in the design process where standardization can have a benefit. Standardization is the production of norms. People design different solutions, and then they see how can these solutions work together. The only moment when companies are not forced to interoperate, they have a monopoly, because their product becomes a *de facto* standard.

I do think it is very important that the government has an understanding of what norms are produced, but not sure if governmental norm-setting should happen inside the standardization process. I think it should happen before and after, because there would simply be too many moving parts. When you are a young programmer, you want to build that one program that fixes everything — in IETF they call it the “kitchen sink” approach: when you try to fix everything except the kitchen sink in one solution. It is hard enough to tackle one problem. We should stop treating the digital infrastructure as separate from waste management, the garment industry, and the financial sector. We should stop with digital communication exceptionalism.

If we look at the history of human rights, we came about in 1947 after the second world war, and back then they were only aspirational. Only in 1967 the first treaty was signed and they became international law. Then in the 1970's came the realization that it is not just states that impact human rights, but it is also companies. It took up to 2001 for the UN Global Compact to be developed, with this concept of corporate social responsibility. That was pretty much: there is an oil spill here, but you build a school there, so you are fine. That disillusionment led to the development of the Ruggie principles – the UN Guiding Principles on Business and Human Rights.

That framework has done a lot of good in a lot of different sectors, because it shows how to do Human Rights Impact Assessment and to involve the people that are impacted. The three pillars are the responsibility to protect, the responsibility to respect, and access to redress. As a universal norm, the next step is to bring it to the digital and makes it a binding treaty. The work to that is long and hard, but that is the history of human rights. Discussions about AI ethics try to sidestep this: it is combining an age-old problem about ethics and the age-old problem of AI. If we put them together, do we think we solve it? Of course not. So the question is, how do we actually hold companies to account and make it inescapable for them, and understandable for society?

In this regard, we can talk of the absence of a right to have rights in the digital environment? The law is characterized by the fact that it can be disobeyed: the traffic light is red, but I can decide to pass anyway. But as we know too well, you cannot disobey a protocol. What is this? Infrastructural normativity?

Human rights are in trouble. You will not have any new rights ratified. We need to fight what is going to happen. I do think there are a lot of territories that in human rights law have been completely underexplored. The right to self-determination, the right to science, and especially a lot of the economics and cultural rights have been completely underexplored and underutilized. I think we could easily interpret these rights to make this translation. That can help you, but what I am more scared about is that we see a departure from human rights in the further development of European fundamental rights. We should really try to be consistent because human rights are the only global norms we have. In its norm entrepreneurship, Europe should bring other continents with it in the development of norms. We should try to keep on building this growing framework.

As for the right to have rights in the online environment, I think we have that when the UN General Assembly declared, in the landmark statement, that human rights online should be respected as human rights offline. This has been said and repeated by the General Assembly, and even the right to anonymity has been accepted as an inherent part of this. David Kaye in his work as Special Rapporteur has done this very nicely. He derived that from the freedom of expression and combined it with the freedom of association. There is a lot of space to interpret these rights in the online realm.

Regarding what you called infrastructural normativity, Keller Easterling shows that the rules of the modern global world are not written in the language of law and diplomacy,

but in the language of infrastructure. Therefore we should address that. Should it have a different level? Infrastructure is not new: Paris' geography was designed for control and Amsterdam for exploitation. If you look at the flows of colonial ships, it is very similar to data flows. It is supported by submarine cables. The companies in some cases are very similar. Infrastructural normativity is harder to show, you can run through a traffic light, but if you run through a traffic bump in the end you have yourself with it because it demolishes your car. We should develop a bigger sensibility to infrastructure.

But I think that policymakers are starting to get there. I think you have seen it here in the city, we are constantly redoing infrastructure everywhere. There is this inherent idea that you can do policy by infrastructure. This is a very Dutch idea: we need to build more dykes! We can change behavior; we change the flow. There is this part behind the central station in Amsterdam where they have removed all traffic signs. This induces a lot of stress in people (cyclists, pedestrians..) and because of it, everyone all of a sudden is more careful. The lack of infrastructure can be an infrastructural ordering! That is a very intentional one, there are a lot of these inversions and things possible. But then again, if you have a car with bigger tires, the traffic bump you hardly notice, so you can organize yourself with sufficient capital around infrastructure. We should not be infrastructural determinists. As an infrastructure scholar, I should be really careful of saying that everything is infrastructure, because this is what economists do: everything is economy.

In this regard, the etymology of responsibility points not only to accountability but also to the concept of care. Can we talk about infrastructures of care? Can we reverse the tragedy of the commons through a platform, for instance?

The big problem here is that the paper about the tragedy of the commons was written by someone with fascist sympathies and it has been disproven time and again by Elinor Ostrom. But still, we want to believe in the barbaric hordes that will take everything if we don't organize it neatly. People are very well able to do nice things. On these platforms, there are a lot of nice things. There is plenty of space where they are the practice and cultural production of care. A lot of Facebook groups, and Instagram trends in which a lot of care is happening. How do we create the right environment for the right rules and rights to be exercised? Here we should not be platform determinist. ... I remember very well this one app in which the only thing it could do is to send a "Hey!" or "Yo!" to other people. I thought it was so cool.

But as soon as it goes beyond that, you can do all kinds of stuff. I do think we should try to enable people to organize in the way they want. We have seen that happen through Fediverse protocols such as Mastodon. Mastodon got forked and used by GOP (Republican Party) and Parler. But there can be better platforms, and we shouldn't be afraid of leaving things behind, we are still at the beginning. We should be learning to let go, but there is this problem of archiving. How to federate and how to export? We should make it easier to take your stuff and burn your house behind it.

In the GDPR there is the right to data portability, which is great. But when you get your folder, where do you bring it?

Exactly, and then we need standards for interoperability of import and export, and we are at the beginning of that, right? But it is the beginning of norm-setting in that area, and I think it is a very promising field. I am in favor of more regulation, but I think we intend this standard to do this, and if it does something very different, we might consider not doing it. We can be experimental with legislation. With the GDPR it took twenty years for the Article 29 Working Group to develop it, and now we are only at the beginning.

But we see also things moving faster, in the new AI regulation they give a role to standardization, which I think is the worst idea. You put a lot of ethical considerations in a standard body where not everyone participates and has experience in it. Or build a mechanism that makes that more democratic. In a lot of the legal processes – and this is a point I didn't make earlier – the state needs to involve in standardization, but standardization bodies don't have all the democratic checks and balances that democratic processes have. The state legitimizes these private processes that are still dominated by corporations. So the state has its democratic processes, and every platform has its own logic.

This is something I researched in my Ph.D. thesis: all these governance bodies have what I call infrastructural norms. That is necessary for people to work together in that body because it is very hard for so many different companies from so many areas to work together. It is really like: this body is doing this, so people can go there and work on that. When you try to overload too many things on one body it becomes too complex. As you said, there are too many variables, too chaotic and it not moving.

What do you think about Europe's self-description as the third way between USA and China regarding platformization?

I think we need to be careful. China is super complex and so is Europe. We see Thales, a French company, FinFiser, a German company, and NSO group, an Israeli company- which are selling zero-days, which are facilitating human rights violations. The undermining of trust in digital infrastructures has been pretty much in the open since Snowden. It's been the USA and Europe all along. That is not to say that China isn't bad, but if you look at the standardization of the 5G, the people that are standardizing surveillance in every layer of the stack are the USA and European states. If we look at the software that we use for the chines firewall, it is a lot of USA companies, such as Cisco that actually facilitate it. We shouldn't say that North American companies are the same in their state either. There is very little corporate citizenship or loyalty, especially with these multinational corporations. It was actually Nokia, a Finnish company, that built the Russian surveillance system.

Here we are back at the Dutch India Company or the Venetian empire, where there was no distinction between public and private.

Shell has been like that for a long time. It is a dialectical game of becoming between them all the time. Britain is still in the trauma of the Commonwealth. With the rise of 5G and the trade wars between the USA, Europe and China are declining hegemony and rising hegemony. It is actually the USA and Europe that have forced the building of these industries. They said:

China you should ascend in the world trade organization and become part of standardization, and build your own patent portfolio and stop copying. Now China is doing that and beating the USA and Europe at their own game, so they are punishing China for doing exactly what it was supposed to do. For years Ericsson and others have sold routers for ridiculous knowledge transfer prices to China, which stimulated the growth of a local economy of routers, which stimulated Huawei to grow. Huawei then started exporting to Africa because it was the only market that was left - in all other profitable markets US and European companies were already there. It is also this world system that has a lot of ironies.

It reminds the notion of infrastructural imperialism.

Yeah, but there it is as if we were falling into it. Imperialism sometimes has the idea of the larger plan, but often it is just like someone on a boat arriving somewhere and thinking he is somewhere else, naming the country, and starting to take stuff. And that is the Dutch - which is really different from British colonialism - the Dutch were just exploitative. We never really built education systems and bring Dutch culture, we just tried to extract. The British tried to bring colonial rules and a different understanding of the state, and these were not pre-meditated ideas but deeply ingrained in the Church. It is just the imprint of social relations. This doesn't mean we cannot prescribe guilt, but also we should try to be reflective. To go back to the network ideologies, what we imprint is not just values and ideas but ideologies of systems, practices, institutions, and economies. It is kind of a return to ideology after it became a dirty word. But now we see that capitalist ideology has taken over, maybe it is like that passage from...

Tell me you are going to quote the bible, please.

Very close, it is a passage from Milton's *Paradise Lost*: it is the speech that Satan gives when they are thrown out after the battle for heaven. They fall to the bottom; they wake up and everybody is dazed. But Satan says that it is better to be out here and fighting for what we want to be there and not having what we want. We should keep on doubting and trying to produce the infrastructure we want.

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Fig. 11: Platform as a Coordination Mechanism

THE NEXT LAW OF THE PLATFORM

INTERVIEW WITH PADDY LEERSSEN

Paddy Leerssen is a postdoctoral researcher at the Institute for Information Law (IViR), University of Amsterdam. I met Paddy during my research period there; he was introduced to me as 'the other platform researcher'. It was true: after the first period, in which I had to use my Mediterranean skills to overcome the Dutch detached politeness, we have been having great conversations. By discussing with him, I realized how knowledgeable he was about a variety of issues, especially about the new European regulations on digital platforms – an esoteric knowledge held by few. In particular, I was struck by his ability to grasp the central elements of complex issues, and to narrow them down to basic legal principles: an ability that, I would argue, distinguished a good lawyer from a bad one. The interview starts with a technical discussion on platform regulation, and continues with broader legal-philosophical thoughts on the concept of publication and on the possibilities of 'platform law'. The interview took place in April 2022 at IViR, in a pleasant atmosphere, and continued when I visited him in Mheer, a rural town in the south of the Netherlands.

Could you provide a definition of platform? How does a platform work?

I see the term being used in so many different ways. The word platform is used to refer to almost any service where there are two or more-sided market dynamics, right? It is an intermediary service that brings together users for exchanges. This is an extremely broad definition, and you might say technology-neutral; a newspaper can be a platform, and communications networks are platforms as well. But the way in which I see it more commonly used is in the technology-specific sense of online service, so one that uses the internet and digital technologies to perform that task. Intuitively, I think most people, when they talk about platforms, are talking about the big B2C services that operate through HTML - so via not just the internet, but the web. The App Store is a platform, but it's not one as obvious as in the popular imaginaries of the term. It's not as prominent as the Facebooks or the YouTubes, which are really the points of reference.

Interestingly, that same preoccupation is reflected in the legal definition we now see in the Digital Services Act (DSA). The DSA is the major flagship regulation of platforms in the EU, along with the Digital Markets Act - they are twin proposals. It has a tiered system of service definitions, some of which are very old and some which are very new.

It starts with the minimal. There's a generic concept of intermediary services, and then it distinguishes three types: first, telecommunication services, or what are called "mere conduit" services. Second, caching services, which enable the storage of information solely so that it can be more efficiently forwarded along the communications networks - such as content distribution networks; finally, the third is hosting, which is defined by the storage of information at the request of the user. I would say that many online platforms, as we typically understand them, fall within that hosting category. But then here's a separate legal definition for platforms,

which the DSA defines as a subcategory of hosting: hosting in which the content is made available *to the public*. For the DSA, a platform is a service that consists not just in storing but publishing information provided by other users.

This brings up the problem of publication, which is defined as access to a potentially unlimited number of viewers. That rules out messaging apps like WhatsApp, because its messages are limited to a specific number of users. Or, indeed, something like Dropbox. But already it becomes rather complicated because Dropbox also allows you certain publication functions. When you dig deeper - and there's been lots of academic commentary on this - the internet challenges our traditional conceptions of what publication is. It is fragmented and entangled in many different ways with private communications. It is already clear that the term social media it's somewhere between the public and the private or the social. And so I think that definition of platform that we now have in one of the major regulatory instruments is totally unstable.

Moving a step backward, what are the DSA and the DMA? Why were they conceived in the first place and what is their expected function?

We can discuss them jointly as the 'Digital Services Package': it consists of the Digital Markets Act and the Digital Services Act. They are two of the key legal exponents of the 'Techlash' that we have seen over the past year. The context here is that internet service regulation is, to a large extent, an EU competence. This was ordained so already in the late 90s and early 2000s because of its cross-border dimensions. The EU asserts here because they consider - a technocratic argument - necessary for the completion of the EU internal market. Cross-border service provision is facilitated by standardization or "harmonization" of rules. That's why in the late 90s we've already got some early internet regulations which resulted in the e-Commerce Directive. Some of those categories I was talking about - hosting, caching and mere conduit - are all 90s concepts from the e-commerce directive. The Digital Services Act should really be seen as kind of an update of that turn of the millennium framework.

It should be noted that the e-Commerce framework was primarily deregulatory. Its main rule was the 'country of origin principle' - which is typical in EU law - which says that if you comply with the law in the country of origin of your service, then you should be presumed to be complying with the law of all other countries in the EU. This is why Ireland practically has sole competence to regulate Facebook and Google and all the other services headquarters in their country that originates with the e-Commerce directive. That's a huge restriction of national capacities to regulate internet services. By the way, 20 years later one of the earliest tech lash laws we saw was the NetzDG (*Netzwerkdurchsetzungsgesetz*) in Germany. It now seems quite possible that it will be invalidated, based on the country of origin principle.

So Germany was setting higher standards of protections that were unlawful?

Exactly, Germany would only be able to regulate services originating in Germany, which is, of course, in the internet context, not very useful. Another important rule from the e-commerce directives is what is now known as the 'safe harbor' framework. This part is quite famous, and the American equivalent is Section 230 of the CDA (as well as the Digital Millennium Copyright

Act). The basic idea here is that in most situations, platforms are not legally responsible for the information that users upload. The illegal activity of users is not their responsibility. Moreover, platforms cannot be ordered by courts to actually be required to monitor this content. It permits, and you might even say encourages, a very passive stance since the platform has no legal duties to monitor what happens on its service.

The safe harbor principle is also deregulatory. It stands in very stark contrast to the conventional concept of publication. If you are a publisher of information, then you are responsible for it; whether it is copyright or defamation, or all these other legal categories we have. But the platform is not responsible. It's a new kind of an intermediary regime; it's somewhere between a media entity - which is entirely liable for what they publish - and a telecommunications entity - which is never liable. We get a kind of intermediary system.

This reminds me of the “we are just a platform” defense, which relies on a false analogy between the internet service provider and the platform. But platforms are mediators rather than intermediaries. Do you believe that this difference is now being taken into account in platform regulation?

Well, you might say that it was already being taken into account in the 90s, but in a way that ultimately did not prove politically viable. It is an intermediary framework because indeed, the internet service providers are somewhere between the telecommunications and media regimes. The platforms are sometimes liable and, basically, the name of the game is notice and takedown. You submit a notice and then the platform responds, but it's a passive reactive kind of management rather than a proactive one.

Until now we've only spoken about the platform duties, but they also had very wide discretion. In the telecommunications context, with Internet Service Providers, their discretion is constrained. It's not just that they're *not required* to remove content, it's that they're not even *permitted* to remove content. This is encapsulated in the concept of a “common carrier” - later instantiated as “net neutrality”. It entails that the ISP has no gatekeeping discretion. They have neither duty nor discretion. Platforms, by contrast, sometimes have duties, but almost always have discretion. As many scholars have pointed out, since the 90s, platforms have always been moderating content, and that's not just a matter of legal duties but one of business strategy. It is a brand management phenomenon. It is customer service. People like Tarleton Gillespie say that content moderation is in fact the service that platforms offer. The service is content moderation, and the law has basically decided to permit this with little to no constraints on the platform's discretion. But this is leading to discontent.

So the balance that was struck in the 90s is no longer sustainable. But the discontent pulls in different directions. So critics will emphasize that the platforms have too much discretion to remove content and that users should be able to appeal. In the same way as for common carriers, perhaps users need some kind of legal protection to guarantee access and stay online. But others are instead emphasizing that the platforms don't have enough legal duties to remove. They emphasize problems like hate speech or disinformation and complain that platforms aren't doing enough; that they're still too passive. So when people criticize this previous

framework as outdated, they're often pushing into two directions: one is more moderation, more responsibility, more intervention; the other is pushing back against these interventions, demanding more scrutiny and more protection for users against the platform.

This regulatory framework sounds a little bit schizophrenic. Do you think that the EU is doing a decent job in striking this balance? Is the EU legislation not radical enough, in the sense that it ends up institutionalizing platforms?

Yes, that's the key contradiction that the Digital Services Act is now trying to resolve now in conflicting ways. I did dive straight into the specifics of this one instrument, the Digital Services Act, but of course, this regulatory project has many limits. It is now seen as kind of the key issue for the regulation of platforms, but its impact risks are exaggerated. That is to say, my view of platform regulation so far is that we lawyers tend to overestimate the role that law plays while in fact, it struggles to address many of the key problems.

That critique can be formulated in many different ways. But the basic problem is that this regulatory project is not about addressing the structural issues of ownership. Who should own platforms? Relatedly, regulation often struggles to address more constitutive aspects of platform governance: how is the service designed? The basic affordances that structure engagement often fall out of view in the regulatory approach.

Again, I'll return to that example of the NetDg, which in many ways can be seen as kind of a predecessor to the Digital Services Act. Well, it's a bit technical, but basically what you see is that platforms, rather than applying legal norms, appeal to discretionary powers which *preclude* the application of the law. How the NetzDG works is that complaints will be sent under the German legal framework and then the platform must assess whether it complies with German law; if it doesn't comply with German law, it must be removed. But the platform, instead of assessing whether it's illegal under German law, first assesses whether it complies with the platform's own rules – their Terms of Service. Pretty much everything that's unlawful in German law is also prohibited on the new platform Terms. So you get an end result where ultimately the German law becomes a tool to enforce the platform's rules, not to enforce German rules.

This is one example of the basic idea that the law plays a rather minimal role in dictating the behavior of content moderation - which is first and foremost a kind of a commercial service or a brand management strategy. That becomes clear when you compare the overall number of removals that happened under the German NetzDG law versus, say, discretionary, anti-spam measures or something. We're talking maybe a few hundred thousand removals under German law versus untold billions under anti-spam policies. So there is very quickly a preoccupation with this, those kinds of very exceptional cases in which legal obligations are triggered, whereas the vast majority of cases are managed through a kind of industrial brand management process, which is largely indifferent to legal requirements.

In the last report by Annabelle Gawer and Nick Srnicek explicitly point out that platforms are regulators of their ecosystem made of complementors and users. Is there something specific about the mediation carried out by the platform?

Certainly, there is a growing recognition among legal scholars that platforms exercise regulatory functions. There is an often-cited article by Kate Klonick with the pithy term of “The New Governors”. Lawyers are adapting to the recognition that it’s not just governance *of* platforms, but governance *by* platforms. I would emphasize that much of the regulation that platforms exercise goes, through non-legal means. We are now seeing attempts to impose legal procedures or concepts onto this framework. Things like due process; appeals rights; codification of content moderation rules in terms of service; explanation of content moderation decisions. All these are elements of the legal concept of due process that are now being retrofitted onto content moderation and curation systems, which don’t necessarily operate in that way at all. There are a lot of disconnects there. This is related to the work of Mireille Hildebrandt, who highlights law as an essentially a text-based system or infrastructure, manifested in the technology of written language. But the way platforms decide about their subjects, is through primarily automated algorithmic means. These are different in a fundamental way.

In the Digital Services Act we have the requirement that platforms must, in their terms of service, describe all their content moderation rules and the sanctions that apply to those rules. And when they make a decision on a moderation case, they must explain it to the user. But the problem there is a major disconnect between how these rules might be interpreted by humans and how they are actually operationalized in terms of machine-readable proxies by the algorithm. For instance, the platform might prohibit hate speech on their Terms, and they might offer a few more elaborations as to what they consider hate speech. How that then is operationalized for the enforcement is based on a set of training data that their machine learning algorithm has learned to seek all sorts of correlations. An example that you often get is that they find that minorities’ use of slang is correlated with hate speech because of certain protected terms they tend to use more frequently. On YouTube, lots of LGBT content end up being demonetized because the algorithm had concluded a correlation between hate speech and the use of the word ‘gay’. The word gay is often used in homophobic hate speech, but of course, it’s used in all these other innocuous contexts as well.

So as we see here, the algorithmic logics that govern and determine how content moderation decisions are made, are only very indirectly related to the policies they supposedly serve. It’s more like an ex-post rationalization. For that reason, I think the Terms of Service give you only a very limited idea of what the platform is actually doing. That’s a problem for the legal approach. Evelyn Douek has pointed out that the lawyer’s imaginary of content moderation tends to be one of a quasi-judicial process; some third party comes with a complaint (a takedown notice), which the moderator handles as a kind of judicial arbiter. The moderator gathers evidence, weighs it judiciously, and comes to a decision based on an interpretation of the facts in light of the rules as formulated in the terms of service. But it’s not like that, at least not in most cases. In most cases, the terms of service do not actually guide decision-making, or only very remotely and indirectly. Even when human moderators are deciding, they’re not deciding based on the terms of service.

What do they base their decisions on then?

Very crude heuristics and rules of thumb, which are related to the terms only remotely. It's not like the kind of legal exegesis that you would expect of a lawyer or a magistrate. So, for instance, against returning to hate speech or anti-terrorism, it was recently leaked by *The Intercept* that Facebook has a blacklist of organizations and if you even mention those organizations, your account is going to be sanctioned. Organizations like Al Shabab or al Qaeda. The list goes on. Nominally, formally, the decision is said to have been based on the violation of terrorist propaganda policies, right? But again, it doesn't occur in the same way that a legal analysis does, I would say. Like Sarah Roberts points out, it's more like an industrial process.

How did you start studying platforms and got interested in them?

I think if I'm being honest with myself, I come from a very privileged position and I was a nerd, so I liked the internet as a teenager. I first went into law for other reasons, not related to the internet. But when I started an honors program where we had to come up with research projects, I decided to do some projects around copyright takedowns, and this led me down a path toward a career in information law. My initial interest in this topic, looking back, came directly from my own personal experience: the frustration that I was unable to view the geo-blocked content that my sister was watching in the UK. You got this big copyright notice saying, you know, "This content is unavailable in your current location". I was both frustrated and fascinated by that. Then later that led me to look at net neutrality, which was another hot-button issue in internet communities at the time.

Looking back on that kind of trajectory, I think this was one of the few areas in which a relatively privileged kid like me encountered regulation or the law as constraining. With the knowledge I have now, I might actually have preferred to study social justice or labor or taxation. But I guess at the time, it was just one of the few issues that were really visible and tangible to me. Online is where I first encountered the law. I do often find myself second-guessing whether, in the grand scheme of things, all these legal debates about removing this or that piece of content aren't rather trivial - tinkering around the edges of much larger structural issues. My current interest in content moderation is more intellectual than urgently political, I suppose.

Do you think that this study of platforms has changed over the last decade?

Certainly. It was about 10 years ago that I was starting my first forays into this topic. It was a very different time. I was at the tail end of this internet optimism, with its roots in the 90s cyberlibertarianism. And so my first impulses were in that vein. The gravest injustice was information being censored or blocked, right? And that was one of my main concerns at the time. I thought net neutrality was very important - and I still think so - and I was very frustrated by copyright law. Yochai Benkler was a very early inspiration for me too. Scholarship at the time was much more critical of the rule of law and of government and much more optimistic about the role of platforms. And that, of course, has all changed over the last 10 years.

I think we see now a resort to the law as a necessary evil. But there are still very deep fissures and contradictions in the legal community around this issue. It's kind of a Scylla and Charybdis situation, right where we have the trust in platforms has waned, and the law and regulation are seen as necessary counters. But there is, of course, still the much older and stronger intuition that government control over online speech and indeed surveillance of semi-private communications is undesirable in its own way. Between those two powers, that's a tension that many legal scholars are grappling with.

What is your futable imagination of platformization?

I think that's an interesting question. I realize that I don't have it. My lack of vision or indeed optimism goes far beyond platforms, though. People like Mark Fisher have commented on the fact that basically, we are unable to imagine collective alternative futures in general. The fact that we have no alternative imaginaries for platforms is just an excellent example of that much more fundamental feeling of paralysis, our collective futurelessness. That's the pessimistic note I would strike.

I think a lot about the work of Wolfgang Streeck on *How will Capitalism End?*, where he's responding to that same question that people like Fisher are raising: how can we imagine the end of capitalism? Streeck notes that most imaginaries of future alternatives tend to be revolutionary and climactic in some sense, where you progress from one phase into the next through a sort of radical break or pivot point. But for Streeck, our current moment is defined by this paralysis in which we are unable to collectively manage our response to societal problems, and therefore the more likely future is not a sudden end, but rather a slow decline in which systems break down and problems accumulate and people less and less able to govern collectively. And instead, people are forced to resort to more precarious support systems like close family ties.

If you're asking me to think about the emancipatory potential of these digital technologies, then in my mind I tend to return to existing examples like Wikipedia, which I think is a beautiful project in so many ways and reflects perfectly the potential of digital technology. Even something like Reddit - though of course, it is owned by a for-profit corporation and in many ways is far from an ideal - the basic technological design, I think, is terrifically democratic. Relative to a Facebook or a TikTok, it is already structured in a much more democratic way.

If I were to speculate as to what I think would need to be improved, it's mostly about ownership and organizational structures. As long as it's a publicly traded Silicon Valley corporation, it is fundamentally not a trustworthy organization for most media purposes or publication functions. At a minimum, there needs to be some kind of locality. That in turn demands some form of interoperability so that you can have cross-border and international communication while retaining some form of local control. Anyway, so I have some ideas, but they're not particularly worked out, and I don't spend a lot of time thinking about them. I see the regulatory project as, well, as basically a rearguard action. I think we are sliding into a horribly undemocratic future. Platforms will be catalysts of that death of democracy. I don't think the law can do much more than stave off the inevitable as long as we can.

It's funny that you mention the catalyst. In describing how power works in contemporary societies, Niklas Luhmann uses precisely this metaphor. Anyway, if we adhere to a pluralist position both towards technology and the law – they both are not neutral and not only an instrument – one of the interesting paths is by design regulation. What do you think about Hildebrandt's idea of legal protection by design? Can we make it easier to context the architecture of the platform in front of a judge?

This is obviously possible. The law already does this in many ways. I'm being provocative here, but we already have product safety standards; we have telecommunication standards. All of these things are backed by the force of law. If you design an electrical socket without following relevant standards, and it short circuits, you have a liability. In some cases, it's not even just a civil liability, but there's also regulatory enforcement. We have it with medicines. There are all sorts of artifacts that are already regulated in what you might call a regulation-by-design approach. Disability access is a great example, which is much more political in the US than here. If you don't have a proper on-ramp into your public building for wheelchair access, you can get sued. What makes platforms different? Part of the answer has to be that they're not even physical artifacts we're regulating, right? It's data and code.

The metaphor here is that of software architecture. We can refer to the etymology of public, as the opposite of secret: in the example of disability access, you can see there is no ramp. But the platform also hides the ramp, it moves the on-ramp without being observed; you have no access to code and, even if you had it, it would probably don't make a lot of sense.

Yes. So one part is complexity, which is not necessarily the sole property of digital entities. There are many areas of technology that are too complex for many people to properly understand and regulate. But platforms are uniquely complex in their use of machine learning, which is, I might say in some ways, new in how it resists human explanation and intelligibility. The other issue is what many people tend to call transparency. I have been thinking a lot about the concept of transparency and associated concepts. Bernard Rieder and Jeanette Hoffman propose 'observability' as an alternative to transparency. Another adjacent concept is publicity, and, for Thomas Poell, 'publicness'. What these concepts all refer to is that in many cases, the ways that digital technology manifests and exercise power are difficult to observe for third parties. And that is a precondition for being able to regulate, for the law to assess it.

Transparency is sometimes the wrong metaphor to describe this problem. Transparency is, in the first instance, a metaphor, it's a physical property, right? It is the capacity for a material to let through light and thereby permit people to see through it. This is a metaphor that is originally used mostly in the context of organizations. Because transparency implies *seeing* without *accessing*. If you have a window, you can look through it, but you can't put your hands through it, so you can't touch it or enter through it but you can see through it. An outsider to an organization - typically, historically, that would be a government organization - could still observe its internal actions.

With software, the problem is, in some sense, more fundamental. Observability captures this.

It is something that occurs outside of view in every sense, because it doesn't manifest in a physical form that is visible to the eye. The problem is, how do we then monitor what happens in these platform systems in a way that's intelligible and that then allows regulatory projects to take hold? Jennifer Cobbe takes some more Foucauldian analysis and she talks about algorithmic resistance. It's not just regulatory projects, but any capacity to counter the power that these algorithmic systems exercise requires that we have some view on their behavior and effects. This is where the concept of publicity - which is a more normative inflection - is interesting because of the tension with privacy.

Publicity is often understood as a synonym for transparency although they have, of course, slightly different histories. Publicity is the original term as it was used by Enlightenment commentators. Transparency is a bit of a neologism in that regard. Publicity has certain connotations that transparency doesn't, which include being accessible to all. The concept of publication refers to an indefinite public. Publicity speaks of the status of a communicative process. Publicity is also reflexive; it speaks to the way in which parties to a discourse understand the nature of that discourse in terms of who it's addressing. It describes the basic affordance that people can access a medium or communications flow, a private communications flow like a letter or a telephone call can only be observed by a definite number of parties at the receiving end. But a public communication flow is one that, in a technical sense, is accessible to many, and this publicity of course shapes, reflexively, how that communication takes place.

I've been interested in literary perspectives, from people like Michael Warner, who argues that the concept of public communication as it's been developed since the Enlightenment brings with it all sorts of discursive conventions as to how we address publics and how we what kind of information we disclose about ourselves or don't disclose about ourselves. So publicity is defined not just by technical affordances but by users' understandings and expectations. It's a much thicker concept than either transparency or observability.

Edd Finn had actually argued that Google's tree of knowledge is a fundamental break with the organization of knowledge of the enlightenment - whose reference was the Encyclopédie - as a way of categorizing knowledge. The corresponding figure was the bourgeois of the society of men of letters that would cooperate to achieve universal knowledge. But with platforms, the way conflicts are resolved is hidden in the logic of the database. It is a sort of 'algorithmic enlightenment'.

This is fascinating because it speaks to the basic information asymmetry of platform governance. The platform has this tremendous wealth of knowledge, unprecedented in so many ways, detailed knowledge of social and economic systems that they govern. Then the parties that they are governing have very limited information, right? This is the asymmetry. So many of our imaginary projects around platforms are aimed at adjusting this asymmetry. They say: the public and the market participants and all the other stakeholders in these platform systems need to have equal-footing access to this information and the benefits it produces. The overall goal then is redistributive in some sense, about sharing the wealth or sharing the knowledge. But the problem that I see and what I was trying to get out with this concept of

publicity is that we struggle with how to do this without turning it into mass surveillance of all users. That problem is now described in terms of privacy: can we design structures or ways to turn the knowledge produced by platforms outwards? Can we do this without ending in total disciplinary censorship and surveillance?

This relates to this total collapse of the concept of public and private that the platforms have facilitated. We need to have more democratic access to the knowledge or the data about how these systems operate, which now, as I said, is asymmetrical, and concentrated in the platform. Because right now, we don't really understand how platforms constitute public spheres or semi-public spheres or, you know, publicity. Only the platforms themselves really know. In all those services we have forms of public discourse, which we might wish to see documented, archived, and made governable in different ways. But the problem is that they are entangled with intensely private forms of communication. In practice, these are very difficult to separate.

This problem recurs in very simple and concrete cases. For instance, regulators and commentators wanted to know what is the most popular content on Facebook. Facebook created this tool called *CrowdTangle*, which enabled this kind of monitoring of what is performing on Facebook, and what are the most popular posts. It turned out that the top 10 performing accounts in the U.S. were constantly these alt-right agitators. And so Facebook shut down the tool because they didn't like the picture it painted of their service. For me, this highlights the importance of that knowledge asymmetry, for any regulatory project or indeed for any kind of project trying to contest what happens on these major platforms.

So that's the case for access to data. But how is this entangled with private speech? Well, for instance, when Facebook tried to disclose all its advertisements, the public wanted to know what the targeting mechanism was used for each ad. Was this Trump ad targeted at diabetics? At right-wingers? Et cetera. But Facebook objected: we cannot disclose this because then when you see that people have responded to an ad - whether they have liked it, or commented on it - you would be able to infer that they fall into one of these targeted categories. So advertising, this typically public form of communication, is now entangled with personal liking, sharing, commenting, and all these other intensely private acts.

We're struggling to find ways in which to render visible one without the other. I think the answer might lie to some degree in aggregation. What we need is aggregates, but that's only the start of that project. Michael Warner has commented on the fact that publics have always been manifested out of private readership acts. He writes that all the verbs we have for public agency are the aggregate of private readership or something to that effect. Publics have always been manifested in many people sitting at home and reading books or watching TV, in what we consider typically private acts. In the past, it was also the case that publics were uncertain. People even said publics were unknowable. The whole point of publication was that you published something - like a book or a pamphlet - and it becomes available to this indefinite array of people who you don't necessarily know, and you don't necessarily know them. What's changed is that publics are knowable and unknowable in different ways now. In the past, there were certain contexts for publication, which are now collapsing.

Context collapse is a popular criticism of publicity and on the internet. In the past, publics may have been unknowable and indefinite, but there was a rough sense of context. You may not know precisely who is reading your work, but you have a basic sense based on the journal, newspaper, the broadcasting venue.

With platforms, it is the opposite. *Ex ante*, the public is totally unknowable, and you can reach practically anyone across the globe instantly, and you're subject to the whims of these volatile recommendation systems and logics of virality. But *ex-post*, publics are measured very precisely. Gillespie talks about calculated publics. And those calculations, that knowledge, is held exclusively by the platform, and, to a lesser extent, their advertising partners. So we've moved from a concept in which publics were roughly knowable and predictable to a kind of decontextualized and precarious but also hyper-surveilled publicness. Crucially, because of the information asymmetries of platforms' decision, these publics are also losing their reflexivity: publics struggle to understand themselves.

In a sense, it is a self-fulfilling prophecy. What do you think about the issue of privacy and, more crucially, data protection? After four years of the GDPR, how many of the expectations were fulfilled?

About the GDPR, there's an interesting distinction in European law between privacy and data protection. It insists that these are distinct rights, even though so often they're conflated. I think that there's some sense to this distinction, with the GDPR as a data governance instrument in a broad sense, rather than a privacy protection instrument in a narrower sense. The potential of the GDPR lies in so many different realms where the connection to privacy is only very limited, certainly if you're working with that original meaning of privacy that you're pointing to as a kind of domesticity or a kind of sphere outside of the public.

This is what my colleague, Jef Ausloos has been working on in terms of, for instance, individuals' GDPR rights. These are rights as regards the use of personal data about the individual. So their personal data rights might include the ability to correct data that others hold about them, to demand erasure, including what is known as the right to be forgotten. But also the right of access; to see what data others hold about you. Jef and his colleagues have studied how that right can be used in different contexts, for collective and activist purposes. And for instance, they point to labor disputes; being able to access information that an employer holds about you can be very useful. It can also be used by journalists to investigate algorithmic structures. All these examples are for me totally nonsensical to describe as privacy protections; data protection is the better term in these cases.

Let me restate that the GDPR also is an horizontal instrument that applies across the board to practically all entities. People see it as regulating Big Tech, but it regulates almost everything. It applies to all private entities and to all government entities, albeit with major exceptions such as intelligence services. But the default rules applies to everything and all data processing. In pretty much any domain where data is being used it, it can provide hooks for people to start contesting power structures or gaining access to them.

It is in fact useful to remind that privacy was created because new technologies allowed to take pictures of the private life of people. And again we are dealing with organizational models that are allowed by technological breaks. Platforms are blurring many others categories of modernity, including the sub-systems of the law: data protection, consumer law, antitrust..

Exactly. Digital technology and platforms reconfigure all these concepts and problematize them in many different ways. I've been most interested in the public-private distinction, but there are many. And yet still, the law plays a role in that reconfiguring. That is the challenge for lawyers right now. The law has all sorts of rights that attach to the concept of publication, and so we're trying to figure out online what is public content, what is private communications, et cetera. But the law also plays a role in constraining how platforms publish, which can have then second-order effects on how people understand their communication on the platform.

I like this example of platform ad archives. It used to be that platforms could target "dark ads", and only the targets would see them. Then platforms were basically required by governments to start creating public databases, and public records of all the ads they issued. In a sense, they demanded that these advertisements became public. At the time, the platforms objected: what about the very sensitive private advertising that occurs? What if you are a dissident in Saudi Arabia and you want to target activist ads on Facebook? To me, this seems like a rather implausible example. In any case, it does speak to this kind of reflexive idea that people will adapt their communications to how they understand the platform to work. Once it becomes known to advertisers that their ads will be on a permanent public record, this will change the way in which they advertise in the future. This kind of semi-publicity that were created by platforms are in turn adjusted by the law, and there's this push and pull that occurs between law, technology, and user expectations.

To what extent would you consider platformization to be a constitutional issue? Is there a right to have rights in the platform?

I worked at the NGO European Digital Rights (EDRi) as an intern for a while, so I'm no stranger to that discourse. I look at this project of digital constitutionalism with some skepticism. The very first paper I wrote addressed this question of fundamental rights in content moderation. Long story short: can you appeal to free speech rights when platforms remove your content? Or is this a totally discretionary power on the side of the platforms? A lot of the legal debate is still focused on that sort of thing.

I think these are important questions to ask but I'm not sure what is gained by framing them as constitutional issues. What is a constitution? The term says that it is the legal act that brings into being the government, and it sets out the conditions through which the government's powers are defined and exercised. The constitution and its rights define the boundaries of the government's power. But the internet is not a legal entity like a government. To speak of a constitution for the internet in that way is nonsensical. At best, you can say, if we have legally recognized rights, which will be enforced via the existing national court systems. But then there's little to distinguish it from a legislative project. So I don't really see anything distinctive about "digital constitutionalism" then.

There is, of course, a distinction between the kind of the Constitution as a legal document and the actually existing governmental apparatus, which is only loosely coupled to it. But it is through the legal system, with its courts, that one can be held accountable to the other. A constitution is not just a normative ideal, it is in fact a very specific legal mechanism through which the administrative apparatus can be held to account via the court system. This is what distinguishes a constitution from a manifesto. I guess you could say that digital constitutionalism, and human rights in general, might still be useful as a rhetorical device, but in the end, I think much of it boils down to advocating for legislative reform. As long as we are clear about that, what it project entails, it is fine, but I'm not sure it's always clear.

To put it another way, the problem would be how to recreate a check and balances 'by design' now that the institutional arrangements have been disrupted. And to train judges to understand all of these.

Checks and balances are already a much better term for me than constitutionalism, even if they are very related. Due process is another useful concept. The first user of the concept of digital constitutionalism was Nick Suzor, and he describes it as a project to set out rules to constrain the governing power of the platforms. That's a pretty good definition, I think, but it also shows how non-distinctive the concept is. Constraining power happens in so many areas of the law, not just in constitutions. Regulation of financial markets? That's constraining power. Antitrust is constraining power. One of my problems with digital constitutionalism is that it can be interpreted as legitimizing platform power. A constitution designates a sovereign. This is one way of understanding what a constitution does. If you're talking about platform regulation by analogy to a constitutional project, if you will, then who is the sovereign in this project? Is it the state? Or, perhaps, the platform?

Platform sovereignty is the implication, I think, when you look at projects like the Facebook Oversight Board. I don't need to explain why I don't like the Facebook Oversight Board, but it's a project of legitimizing the actual mode of governance of the platform itself and creating solely within the platform on its governing structures, rather than from any external controls systems. It is approximating or rather mimicking the rule of law. When you look at Nick Suzor, his explicit concern is that platform governance is not perceived as legitimate and we have this constitutionalism to legitimize it. And only a few years after he wrote those sentences, Facebook hired him to join their Oversight Board. I'm not so sure I want platforms to be perceived as legitimate.

That would be constitution and infrastructure-washing.

Well, they're not making themselves look like infrastructure. That's what they used to do. What the platforms used to do is claim they were just a kind of a neutral carrier. That was the gambit 10 years ago, but it has largely failed. And now you see digital constitutionalism as an alternative. They don't pretend that they are infrastructure. They don't perform as a disinterested kind of technical interface. Instead, they say: "we are the Republic of Facebook, and this is our Supreme Court. Yes, we do exercise power, but you can trust us to do it in a legitimate way". That is what I often see in the digital constitutionalism project. It becomes

a project of legitimation, which will always be largely beside the point. In fact, platform governance is post-legal. It's a post-legal form of digital governance onto which legal rituals and performances are imposed as a kind of post-hoc rationalization, and a play for legitimacy.

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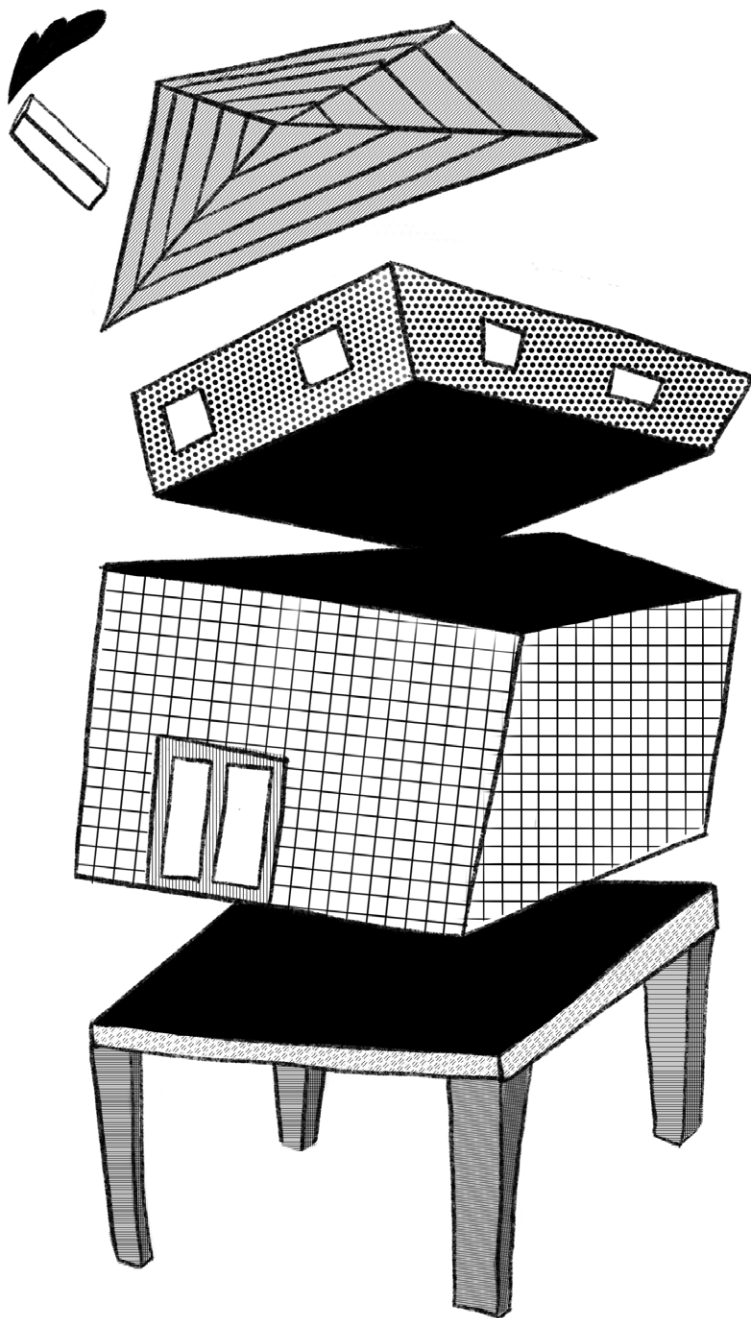


Fig. 12: Platform as a Stack

PLATFORM REGULATION AND THE INSTITUTIONALIZATION OF COMPUTING IN THE EUROPEAN UNION

INTERVIEW WITH JORIS VAN HOBOKEN

Joris Van Hoboken is Professor of Law at the Vrije Universiteit Brussels (VUB), and Associate professor of Telecommunication and Platform Regulation at the Institute for Information Law (IVIR), University of Amsterdam. He also holds a degree in mathematics. Joris works on the intersection of fundamental rights protection and the governance of platforms and internet-based services. As a specialist in data privacy and algorithmic governance, he produces expert reports for the European Union. In the past, Joris worked with the network of human rights organizations of European Digital Rights (EDRI) and the Dutch NGO Bits For Freedom. During the interview – which took place online in December 2021 – we discuss the goals and aspirations of platform regulation in the European Union as both an opportunity and a risk. But behind platform regulation lies an even broader issue: how is the EU going to institutionalize computing?

Could you provide a definition of the platform and how it works?

It is a good question, because there are people coming into this from different backgrounds. The way I came into this discussion is by studying search engines. I started doing my Ph.D., which dealt with regulatory issues with respect to search engines. Then I learned at some point that these things were called online service providers - that was the term then used - and also internet intermediaries. I started in 2006, and then I ran into this more economic literature, whose terminology made reference to two-sided market platforms. This is the platform concept I picked up from the economic literature of the time. In the media and society regulation space, people were talking about intermediaries, online service providers, and internet service providers.

From an economic perspective, I thought that looked kind of well-defined as a phenomenon; certain data processing opportunities made some new economic configurations possible using information and data to connect people and markets. Search engines were an example of that. They were a multi-sided market platform, so I tried to understand the economics of it by studying these auctions they were organizing. It was only later (in the legal terrain we talk mostly about intermediaries) that I wanted to use a broader term, and I called them “selection intermediaries”. Then people started to use the platform term more, but cloud computing was also involved; it came that article on what a platform is by Tarleton Gillespie. It was interesting, but I was like: what? I didn’t really get it.

But then of course it makes sense, you look at it from a language perspective: what is the meaning that you convey using this term? For me, a platform is much more active than an

intermediary. It was one of these discursive moves – moving from intermediaries to platforms - they are actually putting themselves out there, they are really doing something, not like “we are just an intermediary”. Now there are all these different definitions.

Even in law – that is what I am interested in – there are just like five or four different approaches on what a platform is. There are very broad conceptions in the policy space, but now we see more specific definitions in law. The Digital Service Act (DMA) gives an umbrella definition, referring to different legal definitions elsewhere. The Digital Markets Act has a definition that fits to online marketplaces and social media in the broad sense, but not to technical platforms, like operating systems. Maybe that is a very positive thing, but in my work, it is important that I stay anchored to the legal meaning and how that is functioning in practice. That is also how I teach it. Otherwise, I don't necessarily have a lot of skin in the game. You can use the term in any way you like.

Do you have a preferred definition?

I don't have a preferred definition. Two of the interesting new ones are the ones in the DMA. The use of the term platform in “core platform service” is used as a kind of proxy, it is a hook to define the gatekeeper -that is, services that have particular market powers - later on. But then online platform services can vary a lot. And what is actually interesting there is that they are including platforms for media and content, exchange and communication, but they also encompass technical platforms, which are often excluded from a lot of conversations. They don't think of developers' platforms, which are very obviously platforms.

One of the things I like to stress when I talk about platforms, and also when I give a lecture, is that the platform concept often comes with an idealized understanding of the world where the platforms organize things and where different kinds of users come together for some reasons. The thing is that platforms are usually composed of a lot of different services that create a certain experience of the platform, there is an ecosystem of other services that are connected to it, partly offered by third parties, and partly by the platform service provider itself. I don't necessarily like to use the term ecosystems, but that gets used effectively now to suggest that these environments are much more complicated than “we have this one platform”.

What metaphor would you use to describe a platform?

There are different ones, of different kinds. For me, it is an umbrella term. Conceptually in my understanding, there are many different types of entities that can be put under it. If you look at the “online platform” concept that is now put forward in the Digital Service Act (DSA), it's about online services that create online interaction possibilities, so it is basically a non-technical platform. Platforms are quite unique, even within a particular category they have quite unique characteristics that make them interesting but also hard from a political perspective and as long as their policies are concerned.

With telecommunications, you know what the service is; with cable television, it is about having access to the service of watching different media channels. But platforms are so

malleable in the way they organize their services, the features and the things you can do, the information and communication, what business opportunities are created, so they are kind of these gigantic optimization environments. Then you can use metaphors for that. I am quite inspired by what Seda Gürses and Marta Poon have developed, which is called “programmable infrastructure”. I also think what Josè Van Dijck, Thomas Poell and others have said about core characteristics is useful. These characteristics are core and make a lot of sense.

How did you end up studying platforms?

As I said, I started with search engines. Then social media emerged very clearly in the 2000s, and all this 2.0 web, marketplaces became dominant, then it was clear something was going on, a new economic configuration that was very successful and profitable. I always cared about the question very much: what responsibilities and legal liabilities are placed on these types of services that are facilitating and structuring interactions by others, and making profit for it in the meantime? Legally, a very important question is the question of intermediary liability. In law and in information law it has been one of the most interesting questions to study over the last decades, in my view.

It is by now very complex, it is a history of thirty years of law-making. You can rely on the very classic legal doctrine like contributor liability: trying to hold some organization liable for something they didn’t do themselves directly, but contributed to in some ways, is not something new, and it is not an easy question. Understanding how the law is responding to this under the pressures of various powers became very interesting, as well as seeing platforms emerge as a part of the regulatory infrastructure.

There was a very clear regulatory strategy to deputize platforms and delegate certain things to their private ordering operations, and also for other private industries to litigate against platforms, to target their deep pockets and to pressure them, to try to keep control over the value chain (think of the content industry). Legally it became very clear that platform liability and responsibility were key. For me it became an investment, to understand where the law puts these responsibilities, what is happening here, and if this attempt makes sense by looking from some different normative positions, and from a more value-centric perspective.

How has the study of platforms changed during the last decade?

In the law and regulation field, the framing has changed from “intermediaries’ liability” to “platform regulation”. We had mostly a hand-off approach in law, and a lot of self-regulation, and that has really changed. There is now a very active platform regulation program on the economic and also the societal implications of the digital economy, but what is actually happening is that we project everything on platforms: “Platforms are doing that, Facebook is destroying our democracy!” I do not necessarily disagree with calling out their role. They are contributing to harming our democracy, they are optimizing their operations and minimizing costs for their own benefits, but also creating this gigantic mess at the same time. And then they also logically become the entities that are best positioned to solve it.

Platform regulation is gaining momentum now, and it has to do both with the power these new configurations have, and with this new entry point. Platforms have now become the proxy for a lot of regulatory work, and what is interesting is that not only these powerful entities can be deputized, but of course, they use very sophisticated governance structures and techniques themselves. Regulation can step into that as well.

Do you think platformization is going to last?

I don't know if it will stay the same. The economics will change over time, you can probably discern some changes already. If you think about what a platform is, it is structured in a way that emphasizes particular things rather than being something really new. The one thing that is changing is how acceptable we find something to be done in a "platformed way". I am talking about Uber, saying: we are not a taxi service, we are an information technology company. That is a kind of thing you might get away with in certain areas and markets, but you won't in others, then you have to change your character as a service very significantly. If Uber is not a platform but a taxi service, you can still see they are organized in a platform model, but their business will be "taxi drivers employer". We see that happening. Then things become a little bit more classic. The platform model is so interesting because you are basically taking all the profits but not taking any of the responsibilities, benefitting from what is called regulatory arbitrage. Who doesn't want that? So our society is like: well, maybe not in this area, and not here, and you change things quite significantly. Before you know it, you have a regulated monopoly.

What is your futable imaginary of the platform?

I think my imagination is in a world where activities organizing cultural, political and social exchange are not mediated by hyper-commercialized, over-financialized entities. I am anti-capitalist in that sense. What is needed for that would be a revolutionary change, because right now our pension funds have invested in this future where these companies are only getting bigger. That is somewhat concerning. I am invested in a world where there is pluralism and diversity of design and functioning of these kinds of systems. Even though it is great we have this diversity on the Internet – I think in many ways we still do – that is very important, and I think for communications networks it has always made a lot of sense to get there.

I think the impact of current-day computational systems is so enormously impactful for every factor of our society that the organization of computing is absolutely crucial. It has to be part of any kind of coherent political vision on how to organize our society. I see it in that light. If we still want to have political diversity in the world, we need to have a diversity of infrastructures, that support different types of organization of software and services.

I do agree that computation has become a property of all apparatuses. But how do you create alternatives to existing platforms, now that they are there?

I have done a lot of work around fundamental rights, and I still do, but I have also been connected and involved in certain projects about developing alternatives and alternative approaches. I became less interested over time because I personally consider some of that

a little bit of a distraction, considering the enormous power emerging in the mainstream space. A lot of my work has been quite strongly related to understanding what are the societal responses to that in a full-frontal kind of way. It's not because we can fix Facebook and live in a Facebook democracy, but because there is something extremely urgent and critical about the way we confront these dominant platforms that also crowd out other approaches. This doesn't mean I cannot be excited about people who are doing alternative projects; but the regulatory dynamics are pretty intense. How our societies are interfacing with these new forms of power, the political economy of all of that.

One thing I believe is that platforms subvert the categories we use to understand things. You have suggested frontally facing them through regulation. Can you add other tactics?

I think it is good to consider a few different levels. Right now, first and foremost, it is a question of size. I think we do not have institutional or political structures to cope with the amount of power that has been amassed by Big Tech companies. And I think it is even the case in the USA, where the government is very strong and it is the home country of these platforms. That by itself, outside of antitrust or economics, is a reason of concern. They become too big to fail, to control, and to create effective counter-structures.

Then maybe a second thing: my intuition is that we are going to see more and more handshaking between more powerful forces in our societies, in particular between government officials and regulators and dominant platforms. That calls for a whole range of measures on many different levels. We already see enthusiasm about basic levels of transparency and accountability. You want to create some possibilities for communities to have effective weapons and fight against that kind of power that also impacts their communities and practices.

Switching to the etymologies, if we look at the etymology of cybernetics, we get the idea of the power of platforms as controlling users in an enclosed environment. Are users on a different level of lock-in than before?

If I am coming along with your thoughts, there is this nice book from the 1990s - that is worth reading - called *Mirror Worlds*. It is about computing that creates the possibilities to capture the world, but in a much more controlled environment, where we can manage things much more effectively than in real life. Now there is this metaverse thing, which has a more commerce and entertainment-oriented vision, but you can think of it more broadly. You capture some representations of reality but then you start seeing that as a place where you can interact, create practices, and govern in a way that is much more malleable and controllable. In some ways, platforms are operationalizing that vision. There is this obvious question: what gets lost in the process? What ends up being valued and relevant? Those are extremely important questions for us to be examined. We are being pulled into a much more digitally controlled and mediated and programmed space; it is plastic. With plastic, you can create great shapes.

My understanding of platformization is really based on video games and a gamification background: someone builds by design the rules of it, the affordances, but then you also

have agency, you can move around. What is, in your opinion, the link between the way you design the infrastructure and legal principles? Can we create an ex-ante, by design regulation?

I think at some level you have to. Basically also the Chicago economists are worried about capitalism not working anymore. I think from a legal and political point of view what needs to be more on the table is: what shape do we want to give to computing organizations in our societies? That sounds a little bit abstract, but I think that computing has eaten the Internet up. The way computing is organized nowadays is not the result of an explicit regulatory aim. Of course, there were legal forces at play that allowed these kinds of cloud structures to emerge the way they have done. But we are at this point now where we have to decide how, in the long run, we want to institutionalize computing. That is kind of the Cybersyn thing, and having a vision of how that can be done. But I think that in this moment we are not there in our societies. We are trying to see how we can deal with the impact of particular configurations of computing, and I think we have to move beyond that.

To stop for a second on the relationship between law and politics, the situation seems to be that politics is waiting for the law to 'solve' the problem, while the law is waiting for politics. A cynical remark I make is that the main impact of the GDPR was to create jobs for Europeans and make platforms spend a lot of money in Europe. However, not a lot has changed in terms of rights, standards, and safeguards.

The GDPR is nice to comment on. I think what people sometimes forget – especially people who don't know the EU very much – is that the EU has very particular reasons behind its regulations. One of the things that Europe cannot do to exercise its power is making decisions on massive expenditure changes. This time we are going to spend massively on health, on this and that. Europe doesn't really have taxation; they don't have competencies on many crucial issues. If you look at the USA, that is a mature – overmature - federal system, they have that kind of dynamics. A new president, even if they don't manage to pass any law, can make a massive impact on spending. Europe does not have that, so what does it do? What is the alternative to exercising a significant amount of power and supporting the European project? It is to regulate.

Secondly, this is also very relevant for platforms. The digital transformation provides an exceptional constitutional opportunity for the European Union, and the main institutions that are driving it, to define and assert themselves. The GDPR is very much one of the first instances where this is extremely clear. That is something you also see: the Luxemburg court, the European Court of Justice, grabbed this opportunity with the Max Scherms case and the Digital Rights Ireland cases. They said: "This is about the data and surveillance of every European citizen!". And by developing this relationship with people, they can protect people, they can define Europe, and now all of a sudden (that was not the case 30 years ago) it is all about fundamental rights in relation to artificial intelligence and to platforms. This agenda is instrumental to the European project.

Something very interesting about that is that Europe as a political project is anchoring itself to such types of values and thoughts, and that is attached so strongly to developing a regulatory

response to the digital transformation, because of these kinds of contingent factors. So it's not that Europe has an inherent vision of how to regulate artificial intelligence, it flows from this kind of political and institutional configuration. But I also think that for Europeans, or for liberals in general, it is also a symbolic act. "We can still have privacy! We can protect these things!" We can still be free in this world of domination and totally out-of-control information asymmetries. It is not very clear if something like the GDPR is going to make a difference and be effective in really protecting people's privacy and data.

That is true, the law is used for creating identity and has an important function of generalizing expectations of behavior. But at the same time, everything becomes administrative governance.

From a critical legal perspective, it is not far-fetched to say that a lot of privacy law exists to continue surveillance. From the surveillance studies literature it is a very common critique of existing privacy laws. I have heard that the political dynamics at the time the first privacy laws were passed in Europe were often exactly like that. It is obvious that oftentimes regulation is there so that the big things can go on. We get the European AI act so we can have functional markets in AI systems.

Is it about political legitimacy? Are platforms regulators of their ecosystems?

Yeah, it is about creating legitimacy, but that is what privacy law has always been about. It gets very unpredictable if you have to find legitimacy from other sources all the time. It is a very nice thing to say: we are compliant with this and this and that, so no need to worry about your data.

As for ecosystem regulation, I think that it is widely accepted. In a sense, it is also a good thing to see that there are different sources. To me, it seems that from a legal perspective it is very clear that what we see happening in the regulation of tech and tech policy in the European space is actually a transformation of law into a niche. What we see is a focus on new regulatory techniques, risk regulation, standards, certification, all these kinds of things, which is a way in which to start addressing certain problems. It is actually a pretty bad way for addressing certain crucial power dynamics in our society. There tends to be a lot of normalization of the industry and the status quo. Law in a narrow sense, and a legal institution in a more traditional sense, get pushed more and more into the background, it is still there at a national level, but European instruments are quite different.

But with respect to sovereignty and the EU, there is something very intricate going on. There are some very clear limits to Europe's possibilities to have a sovereignty agenda. That is crucial also in the sense that in sovereignty there is a particular kind of attitude to make independent or autonomous choices or determinations. Europe, which is lacking something in that regard (in particular competency in national security), can never be so serious.

China saw the digital transformation coming, an infrastructural reality of computation, digital services and the Internet, and had a reaction that originated from a state that has the ambitions China has in the world in order to organize its own society. I don't know if Europe has the capacity to take something that seriously. But who knows? Maybe it is a good thing that

Europe is very imperfect in that sense. But I do get the sense that a lot of this is performative, a little bit superficial. If you look at the enforcement agenda and the questions: “What is that you need to do in public administration? What do you need to do in creating new legal institutions?” You need to make a massive investment and take these things seriously. That is not what we see. We see a lot of new things on paper, new regulations, and new institutional structures, but it is just a fragment of what is needed to really create a new institutional setting.

That leads us to the institution keyword. According to its etymology, there is tension between the static form of the institution and platforms’ swift change.

Exactly, and we know that the creation of institutions is not something you do from one day to the next! That is the programmability part of it too. I’m quite a fan of Julie Cohen’s work, and in her latest book, she puts it in the right historical perspective. There is a transformation of the capitalist system we are working in, and we have legal institutions now that are responses to industrial capitalism over time. There were massive issues with labor, safety and consumers. It was all about being able to have these functioning consumer markets. The consumer would help to create these possibilities, to create industrial capitalism. I think we are not there yet, to see the counter-response that would be there to create some forms of stability in this new institutional arrangement. I was joking about it in this workshop last week. I said: “We are in this place where there is an enlightened despotism. We are in this space where we do not have counter-power”.

I do have a sense that even though we have techlash and this critical momentum, I still think these technology companies are portraying themselves as the future and the ones that are offering everything people want and what regulators need, if pushed hard enough. We haven’t really come to terms with the challenge of creating these kinds of counter-institutions.

All right, but to what extent do you think this is a constitutional problem rather than a privacy, or misinformation problem? Arendt talked about the ‘right to have rights’ and on the need of a space for rights. Is there a space for rights in the platformization of society?

I’m not a theoretician, but maybe it is also a matter of how you understand that term. However, I do think, also based on what I have said earlier, that is a constitutional issue. A lot of people are coming to that through different lenses, and you can totally get to this trying to understand what is at stake, to still care about something like privacy. In my paper *Privacy after the Agile Turn*, we say: what are the conditions for protecting privacy? We started to look at the technological and organizational practices we are confronted with (Cloud computing, agile software development and services). We started to see that the space there is to protect things like privacy is very deeply reconfigured in quite a problematic way.

You can do the same exercise by thinking of how to protect labor conditions rather than the conditions for independent knowledge creation or how to protect free democratic discourse and participation in our society. These are all entry points you can have, and if you start thinking about what the conditions for protecting these things are, you run into the same problems. That shows there is something very deeply constitutional at stake.

Looking at the etymology of the word public as the opposite of both private and secret, can we still say, with Louis Brandeis, that sunlight is the best disinfectant? What about the transparency of the algorithmic systems?

I think there is a kind of fetish around technology, or the high-tech component of it. It is quite striking, so what often happens is that the bigger picture gets a little bit lost. Let's say you care about pretty complex developments in the way that algorithmic systems end up impacting inequality. You can start to zoom in on the algorithm – maybe it is biased, they used these biased types of data – and it offers a very particular kind of narrow focus. We are basically tweaking the algorithm, we are going to have to improve our algorithms, and we have to create some new rights regarding the way algorithmic systems produce particular types of impacts on the world around us. But how do these algorithms come into the world in the first place, and what type of political economy is at play? What about the role of hyper-financialization in the tech space? What are the very basic business models and political strategies of innovation they serve?

Probably some of that is a black box, but there are pretty effective ways to deal with that, so I think it's so important not only through the technological lens but through a lens that exactly black boxes technology! You want to understand who makes important decisions about these technologies in the way they end up in the world, and how much space is there to make these choices differently. What are these systems being optimized for? Whose interest are they designed to serve? I don't know If we really have to understand how technology works. Even the question of "what do you want to understand about it" has a political perspective. I am not saying that we shouldn't understand technology, but a lot gets lost and sometimes the wrong parties get empowered if we overfocus on more technical aspects. You can actually analyze impacts, and compare the entities involved in those impacts.

I think the counter-movement is probably going to come from that direction. The counter-movement currently in the making, with the help of industry, is focusing a lot on the design of technologies that are pulled into a program, as well as helping technology companies to make improvements to their systems in ways that become societally acceptable. I don't know if that is actually the right approach, but there is a clear logic. All these new services are possible because some basic infrastructures - such as the Internet and cloud services and people having these mobile devices - are there. What you can do with that is incredible. It makes a lot of sense to see the platform model replicate in many ways and levels because it has shown to be an effective approach to building services. Not only commercial, but you can also use the logic of platforms in a non-commercial way of course.

A final etymology I that of the word responsibility, which points towards accountability – what we have been discussing so far – but also towards the idea of taking care. Can we think about infrastructures that enable care practices, 'platforms of care'?

The question is where it is coming from. I think we can imagine the e-government service, as well as the platforms we have, will come with a program of care; but not exactly in the sense you imagine it. It seems pretty typical that the exercise of power comes with some claim of

care. I grew up in a social democratic background, there is that program of care that has roots in history and a pretty problematic relationship with other Western programs like colonialism. There have been these configurations where we ended up with social democracy in Europe, but we have also seen that changing over time, and I think people are trying to understand if that can be reinvented.

Maybe platforms can be regulated so that some type of care can come. I see it already in the platform labor regulation proposal from the EU commission, which is just being issued in December. On the one hand, we have the labor protection program, where the labor status of platforms' workers ends up being defined, and we see new rules on algorithmic management, this idea that labor gets managed by much more dynamic and complex algorithmic power controls. We want to protect people against these things and we give them rights, which is kind of a social democratic program in a way. What happens in the meantime is that people in the workforce get determinations of their legal status as a worker - or not - which then helps to plug them into the official tax system. Tax law people and regulators are very interested in these new laws, as platforms can help to structure the taxation system and also enforce it. They become regulated sources of taxation information.

The tax layer is interesting, also because most of the political spectrum agrees that platforms should be paying some kind of taxes.

But then of course the question is: what kind of taxes should you be paying? It's kind of the state asserting itself and then going a step further, reinventing its system in this new way. One main concern is that the main infrastructure which is used for it is oftentimes the standard one, relying on a particular mobile device, operating system, app distribution platform, optimized system for distributing your message actively. It is quite hard to do things outside of it.

Seda Gürses often speaks about the Covid certificate app. Plugging into that infrastructure for public purposes, seeing the logic of that from a close distance, – and, to be honest, if you look at what is happening in the real world - there is so much energy in just creating systems that can manage risks, population and deaths. Necropolitics is all over the news every day, if you look for it, and I think that is the reality we ultimately have to confront.

The question is what the substance of those policies should be. That is the best starting point for what has to be done at a political level, it is not a technical problem, you ultimately need to create coherent visions of a politics of care. I really wonder if that can happen without fully engaging with these infrastructural realities. It seems that it is impossible not to extend a very radical vision to those infrastructures, and that is something we will all hopefully see in the coming decades, it is something that everybody, at every level of society, will have to be confronted with. I don't know if people fully understand how to articulate the problem. What is at stake and what is the logic of these things, and combining them is what we ultimately need to do to engage with these things. And the political conditions are totally impacted by it too, so we are kind of stuck.

Further Readings

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Fig. 13: Platform as a Stage for Political Speech

A PLATFORM FOR POLITICS

We may dream of the time when the machine à gouverner may come to supply – whether for good or evil – the present obvious inadequacy of the brain when the latter is concerned with the customary machinery of politics. [...] In comparison with this, Hobbes' Leviathan was nothing but a pleasant joke.

Père Dubarle, review of Norbert Wiener's *The Human use of human beings* (1948)

The Politics of Categories and Metaphors

"The platypus", Umberto Eco writes, "is a strange animal. It seems to have been conceived to foil all classification, be it scientific or popular."¹ The history of the discovery of the platypus in Europe is very curious. When the first Australian colonist reached the country, they saw the platypus as a mole, and in fact, they called it 'water mole'. But this mole presented a strange characteristic: it had a beak. In order to figure out what it was, in 1799 a stuffed specimen was sent to the naturalists in England. The naturalists could not believe their eyes: at first, they thought it was a monster crafted by the Chinese in order to fool them. The problem was that they did not know much about the characteristics of the animal. As their first task, they looked at its physical properties and tried to classify it.

The fact that it had four legs and fur made it a *quadruped* that lived in the water. A naturalist called Bewick also recognized the morphological features of fish and birds, but he refused to classify it as part of these categories. Other naturalists thought of categorizing it as a *mammal*; but the problem was that the platypus presented no nipples. The reproductive organ actually resembled that of *birds* and *reptiles*, but it was not cold-blooded, and nobody had seen his eggs. The scientific community, therefore, started to debate its classification – a scientific debate that would last for more than eighty years after its discovery.

During this period, the academic community was divided into two conflicting factions. The first group, which Eco calls the 'mammal party', claimed that the platypus belonged to mammals because nipples had been finally discovered, but no eggs had been found. The second 'egg party' believed that it was part of the *oviparous*, and they were waiting for the eggs' discovery to confirm their theory. Part of the latter group, the protoevolutionist Étienne Geoffroy de Saint-Hilaire created a new, open category only for this animal: the *monotreme*. His problem was that he did not know where to place it in the larger Linnean tree of classifications. For the scientist Geoffroy Saint-Hilaire, it was a very serious problem: if the *monotremes* were *mammals*, the question was settled; otherwise, it was necessary to look for new properties. Eco explains the

1 Eco (2000) *Kant and the Platypus: Essays on Language and Cognition*. The history of the platypus is told at pages 242-252 but stands as an allegory of the very problem of the book.

naturalist's move in terms of the creation of a temporary 'open *genus*', one that avoided making a clumsy classification of the unknown object. For Geoffroy Saint-Hilaire, such a type also had to stand as a stimulus to conjecture, as solving the mystery would have political relevance inside the academic community engaged in the scientific debate. "Taxonomies", – he notably wrote, "are not just ways of ordering, they are guides to action"². It was only in 1884 that the University of Sydney received a telegram with the news of the eggs' discovery. The platypus was a *monotreme*, and monotremes were both *mammals* and *oviparous*.

The debate on the platypus is a splendid example of how 'observation sentences' (if there are such things) can be made only in the light of a conceptual framework or of a theory³ that gives them sense. What took place in the academic community was a negotiation of meaning that lasted for eighty years. They first attempted to understand what was seen by considering the experience in relation to previous categorial systems; and as observations challenged the categorial framework, attempts were made to adjust that framework. Given enough time, the scientific community came to an agreement, and therefore – Eco concludes – "fact had prevailed over theories".

The story of the platypus actually highlights a problem that had occupied Eco for a long time: what happens when we must construct the *schema* of an object that is as yet unknown? In the case of the platform, we have to translate it in terms of observed properties of organizations made of humans and artifacts. At first, the platform was a chimera: it was a company, it created markets, and in it later mimicked states dynamics.

In the following sections, I attempt to clarify the semantics of the word platform in contemporary academic and public discourse. By taking the infrastructural metaphor seriously and in order to provide some context, we shall explore four different but connected layers. In the first layer, I deploy the most useful categories and definitions that I encountered in my platform explorations during the last years. In the second layer, I reconstruct the genealogy of the platform not only as a result of management, software and media studies, but also of cybernetics and system theory. In the third layer, I try to argue for the importance of metaphors in general, and in platform theory in particular as the field dealing with the always-changing forms of platform mediation. I conclude with a speculative (and normative) exercise of imagination on the platformization of political organization.

We are not in the business of building software, we are in the business of enabling interactions.

Sangeet Paul Choudary

2 Eco (2000) *Kant and the Platypus*, 246.

3 Ong (1982) *Orality and literacy*, was critical of the term 'theory', as it is rooted on the visual metaphor of speculation and *spectator*. On the other hand, however, there is a strong association between what is scientific and what is observable. Other ecological approaches are centered, in terms of social analysis, on what can be observed (for instance, communication and social systems) rather than what is impossible to grasp (the state of psychic systems). In this sense, the spectator participates in the construction. See Luhmann (2012) *Theory of Society*. Vol 1.

Layer 1. Attempts at Codification and Categorization

In the attempt to codify a precise meaning of the word platform in the contemporary academic discourse, we are going to consider three definitions of the platform that have been given and that complement each other.

The first definition deals with economics and with the specificities of the platform business model. In *Multi-sided platforms as new organizational forms*, a systematic literature review carried out by several management scholars, the platform business model is defined as

a set of activities for building resources and using them to generate, deliver, and monetize the benefits that users perceive in the platform—that is, the set of activities for creating and capturing value on the platform.⁴

We can already note how this definition implies a *circular* business model: the activities are used to build resources for the internal groups to interact so that, in turn, value can be captured from them. The temporalization of feedbacks, therefore, plays a central role in this definition. This definition also strikes as quite explicit; for the very question to be asked regards the opportunity to leave the management of societal sectors to such private infrastructures.

The second definition, provided by Benjamin Bratton, focuses on the platform as a system of governance and highlights the material conditions of access to platforms. For him, a platform is

a standards-based technical-economic system that may simultaneously distribute interfaces into that system through their remote coordination and centralizes their integrated control through that same coordination.⁵

Bratton's definition points to the inherent political activity carried out by the platform. It also relates to the fact that the systemic distinction between inside and outside — a *form* intended as the “unity of a difference”⁶ — is provided by the *distribution* of screens and interfaces, something which complicates the centralization/decentralization distinction (*infra*). The platform decentralizes because every user and producer of services holds a computational device and can decide if, when, and how to access it; but the access depends on standards that allow the platform to see all the connections and coordinate them remotely from a

4 McIntyre et al (2020) *Multisided platforms as a New Organizational Forms*. This is probably the best paper for understanding the managerial view and ideology of platformization. Similarly, Hodson et al (2021) *Urban Platform and the Future City*, 3, have given the following circular definition: “platforms are architectures that organize and control networks, providing a context and infrastructure for people and firms to create and exchange value in new ways, through matching them with each other and with content, goods and/or services created on the platform.”

5 Bratton (2015) *The Stack*, 374.

6 For the original conceptualization of such a conception of the form, which Luhmann modifies substantially, see the work of mathematician Spencer Brown (1994) *Laws of form*. A form is a distinction that implies itself; it has to be accepted as a paradox.

centralized standpoint. The platform is therefore defined as a *circular* system of governance⁷. The fact that we access platforms mostly via screens is so obvious that we tend to forget how much we are governed by screens themselves.

The third definition, provided by Thomas Poell, David Nieborg and José van Dijck, describes platforms as

re-programmable digital infrastructures that facilitate and shape personalized interactions among end-users and complementors, organized through the systematic collection, algorithmic processing, monetization, and circulation of data.⁸

This definition tries to describe the way in which the platform functions via the feedback between data and infrastructure between two groups. As such, even if this definition is linear, it implies all the series of circular feedbacks that we have encountered throughout the book. In particular, it points to the infrastructural layer of platforms.

Let's return to the platypus and its classification. Two problems of platform categorization can be distinguished. The first, *external* problem of categorization deals with how the platform relates to other social forms of organization such as the firm, the market, and the state.⁹ The second *internal* problem, which we are going to discuss here, regards the distinguishing of platforms from one another: Google from Uber, and Uber from Amazon. It is not easy to carry out this activity analytically, as they differ so much from each other. As I will try to argue in the cybernetic branch of platformization, platforms have worked, historically, as re-categorizing machines and societal standard-setters. Here I have collected some of these attempts of categorization based on differing logics.

The first attempt is carried out by Marc Steinberg, who proposed three *historical* categories based on those of management scholars Negoro Tatsuyuki and Ajiro Satoshi. First, he distinguishes between *product-technology platforms* as computer hardware (programmable platforms), console (games platforms) and automobiles (product platforms). The main characteristic of this category is that of being stacked. The second category includes *content platforms* such as social media networks and video streaming, which are based on the dialectics between contents and platform. The platform is here in a position of superiority regarding contents, as it not only distributes them, but also controls them. It usually functions as a mediator between users and advertisers.¹⁰ Finally, *transactional or mediation platforms*,

7 It is again Luhmann that first revived the interest of organizational sociology in circular definitions. He defined an organization as "a system that generates itself as organization". He then adds: "We then only have to define how this happens" in temporal terms. Luhmann (2018) *Organization and decision*, 29.

8 Poell; Nieborg; Van Dijck (2019) *Platformisation*.

9 Something that I discuss in Cristofari (2022) *Bratton and the Double Movement of State Platformization and Platform Institutionalization*. In my opinion, the platform ought to be understood as the abstract *organizational form* that can then be applied to the company, the state apparatus, this or that organization, etc.

10 Steinberg dedicates many pages to reconstructing the emersion of the platform as a container that presupposes the emergence of contents. See in particular the chapter *Platform Typology*.

like shopping malls, bars, credit cards, and even the present book, can be defined as technologically agnostic and composed of an architecture and set of rules. This category would therefore be closer to the concept of the non-digital, 'analogical' platform: a very broad concept that represents an immaterial apparatus of mediation, as well as a schema for meaning-making, but according to which "almost anything can become a platform, if one merely calls it such."¹¹

The most traditional exercise is to categorize platforms based on a *shared set of properties*. That is the operation of Nick Srnicek, who in his *Platform Capitalism* distinguished between: *advertising* platforms like Google, which rely on user-generated content and data as raw material for making predictions on user behaviour for targeted advertising; *cloud* platforms like Amazon Web Services (AWS), deeply rooted in computational power, that engenders a form of infrastructure ownership; *product* platforms like General Electric and Siemens, considered as the digital evolution of traditional firms once based on manufacturing and products selling, which embedded sensors and computers chips into the production process until "material goods became inseparable from their informational representation"¹²; *industrial* platforms such as Zipcar and Spotify that follow the 'good as-a-service' model, whose main feature is the ownership of the asset; and finally, *lean* platforms like Uber and Airbnb, which are based on extreme outsourcing and part of a longer outsourcing trend in the history of capitalism, and have the riskiest and least innovative business model, since they seek a monopoly rent.

Management scholars such as Gawer, Cusumano and Yoffie have categorized platforms according to *how they produce value*.¹³ They call *transaction platforms* those that facilitate transactions between many individuals and organizations that would otherwise have difficulty finding or transacting with each other and that capture and transmit data, including personal data, over the internet (e.g., Tmall, Google Search, Amazon Marketplace, MercadoLibre). These platforms serve as an intermediary for direct exchange or transaction, subject to network effects.¹⁴ *Innovation platforms*, instead, "serve as a technological building block on top of which innovators can develop complementary products or services (e.g., iOS, Google Android, Linux)." These platforms thus work as the technological foundation for other firms to develop complementary innovation. Finally, the third and intermediary category of *hybrid* platforms "combine characteristics of innovation platforms and transaction platforms." Google, Amazon, Microsoft, Apple, Facebook would all fall in this category.¹⁵

11 Steinberg (2019) *The Platform Economy*, 1.

12 Srnicek (2016) *Platform Capitalism*, cp. 2.

13 Gawer, Cusumano, Yoffie (2019) *The Business of Platforms*, 19-20.

14 See however the lucid analysis of Kneer (2021) *The Platform Delusion*. Kneer identifies what he calls the four 'pillars of the platform delusion', commonly believed sentences that may not be true as we think. According to his economic analysis, digital platforms are not necessarily structurally superior to analog platforms; not all platforms exhibit powerful network effects; network effects do not lead inexorably to winner-take-all models. Instead, he suggests investors to focus on the very nature of their competitive advantage. If all these criticisms are on point and well documented, I believe that they do not undermine the sociological understanding of digital platforms as new infrastructures of society.

15 The opposite perspective is provided by Casilli, who suggests a categorization of platforms based on *how (digital) labor is produced*. He defines platforms that work with "on demand", such as Uber or Foodora, as *service* platforms; platforms such as Amazon Mechanical Turk or Ubers as of *microwork*

In the field of platform urbanism, Caprotti and his colleagues proposed a typology of platforms active at the urban level, distinguishing between four distinct categories. The first two are primarily private sector-focused: *online-to-offline producer–consumer intermediation* (as Deliveroo or Meituan), and *service provider-customer intermediation*, with examples such as ride-hailing forms (Uber) or the navigation app Waze. The third and fourth are centered on the public and non-profit sectors: *public service intermediation* (such as Virtual Singapore), and finally *non-profit service intermediation*.¹⁶

Finally, Van Dijck, Poell and De Waal have adopted a more systemic categorization based on the societal sectors in which platforms operate. They distinguish between *infrastructural* platforms – those that simply cannot be avoided and that own a consolidated ecosystem, such as Google, Facebook, Apple – and *sectorial* platforms that serve a particular sector or niche, such as news, transportation, food, education, health, finance, or hospitality.¹⁷

Those categorizations can be extremely useful for working with platforms: what is left to the academic community seems to be the creation of new platform taxonomies, in an attempt to categorize the categorizers. Nevertheless, in order to understand how we got here, it is worth taking a step back.

Layer 2. Two Genealogies of Platform Conceptualization

Even if the platform is made possible by a combination of specific technologies, it is not a technology in itself: like the state and the market, it is more of a useful fiction. The genealogy of platforms is rather fragmented, and I am going to present what I consider its two separate trenches. The first is corporate-based and ‘capitalist’, interested in market optimization and profit; the second is state-centered, socialist, cybernetic, and equally interested in system optimization. Before going into these different underpinnings of platforms, it is useful and necessary to etymologically approach the concept, with the awareness that in the case of the platform, it contradicts its contemporary semantics.

The word platform comes from t Middle French *plateforme*, composed of the Greek *platús* (flat) and Latin *forma* (form): it designates a flat space. As reported by Antonio Casilli (and perhaps not surprisingly), we encounter the first usage of the word platform in a *theological* context. Starting from the sixteenth century, the term is found in the *Ancien Régime* and in England, where it is used to indicate “fertile soil and more generally a productive resource.”¹⁸ Traces of

platforms; Facebook or Snapchat are considered *social* platforms. See Casilli (2020) *Schiavi del click*.

For Casilli, digital labor is essentially located in a gray area between bargaining and employee work. Like the first, it is an activity released from a fixed place, based as much on sociability and cooperation as on cascade subcontracting. As the second is inscribed in a relationship, that between workers and owners of digital services, characterized by subordination, surveillance and inequality in terms of rights.

16 Caprotti et al (2022) *Beyond the Smart City: a Typology of Platform Urbanism*, 9-10.

17 Van Dijck; Poell; de Waal (2018) *The Platform Society*.

18 Casilli (2020) *Schiavi del click*, 62. All the quotes from his text are translated by me. Instead of the Polity by Commons, platformization has led to countless ‘independent contractors’ working in precarious conditions. Casilli notes that, ironically, the way the term ‘platform’ is used nowadays as the base of the

the word already emerge in the 1582 adaptation of the work of 13th-century encyclopaedist Bartolomeo Angelico, while in the seventeenth century, the Reformed Churches of England proclaimed a number of platforms in the Cambridge Platform for the Puritan Congregationalist Churches of New England¹⁹.

During Cromwell's protectorate, the term platform was already used *politically* to indicate a vision of society and the role of human beings with respect to the authorities and with respect to themselves. The platform also appears in the 1652 proto-communist manifesto of the Diggers movement *The Law of Freedom in a Platform*, where it designates "a pact between a plurality of political actors to negotiate access to common resources and prerogatives."²⁰ It is worth noting that an intellectual of the time, Sir Winston Churchill, claimed that the revolutionaries who put to death Charles I in 1649 were motivated by the intention to "erect a new Model of Polity by Commons only", and to this end "they set up a new Platform, that they call'd the Agreement of the People."²¹ For Casilli, the convention between religious entities had become a convention between political entities, in a process of secularization.

The political use of the term is highlighted also by the connections between the word platform and the word program. Originally, program meant a public edict. In the early modern era, "it also comes to mean variously a plan or scheme, a list of events to be presented, a menu of proposed political ideas, and a way to organize how people will occupy architectural space." It is only after World War II that 'to program' came to mean 'to write software'. As pointed out by Bratton, the word program also "has central significance as a design problem and governing technique" in the domains in which digital platforms operate – architecture, computation and politics. In architectural terms, Bratton defines the program as "an intended organization of Interfaces in a particular arrangement so as to coordinate social contact and interaction (or prevent it)"; while in computational terms, a software program is a "set of instructions that a designer gives to computational systems with the intention of coordinating that system's internal and external interfaces in relation to itself, to compatible systems, and to Users."²² For Chun – who explored the relationship between software and logos – "Software as logos turns program into a noun - it turns process in time into process in (text) space."²³ Von Neumann himself, in establishing the possibilities of source code as something "iterable and universal" - described with the metaphor of source code as logos - relies on a circular movement.²⁴

"sharing economy" seems like a distortion of its communitarian origin.

19 Ibidem.

20 Ibidem.

21 Winston Churchill, *Divi Britannici: Being a Remark upon the Lives of all the Kings of this Isle from the Year of the World 2855, unto the Year of Grace 1660*, London, Thomas Roycroft, 1675 [1660], 356, quoted in Casilli (2020) *Schiavi del click*, 64.

22 Bratton (2015) *The Stack*, 43. As such we can understand why the former political director of the German Pirate Party, Marina Weisband, has once stated that what they were offering was "not a program, but an operating system".

23 Chun (2011) *Programmed Visions*, 19. Italian philosopher Remo Bodei (2019) *Dominio e Sottomissione*, 22, in reconstructing the history of western rationality in relation to slavery and automation, has argued that with machine learning technologies we are facing a new form of rationality, one where the *logos* has become embodied in the machine rather than in flesh.

24 "It must contain, in terms that the machine will understand (and purposively obey), instructions (further

A revolution in management is in the making. It will take a new, network-oriented view of the economy and an understanding of the consequences of interconnectedness to smooth the way.

Albert-László Barabási, *Linked* (2002)

Corporate Branch: Capital Regenerates Itself

The etymology of 'platform' seems far removed from how workers and managers understood the term in the early 1990s. By that time, the platform had become a standard term in the automobile sector, where in 'car talk' it designated the "base model", (i.e. the stable component that has to be integrated with other parts) in the creation of different car models. In this sense, the platform had become the "core technology of an automobile" that "determines the general outlines of an automobile's basic structure (architecture), and is composed most centrally of parts like the floor pan and suspension."²⁵ In this context, automobiles are understood as platforms, implying a sort of circular logistical thinking.

Starting from the 1990s, Japanese, French and American management scholars put their eyes on specific kinds of markets presenting novel economic dynamics. These markets were multi-sided. Like a chassis, there was something fixed and something moving; the variables here are the two or more groups to be matched in a single space of interaction. What management scholars were concerned with was the discourse around the advent of postindustrial society – the post-Fordist, Toyotist mode of production – which was seen as an attempt by capitalism to renew itself.²⁶ In fact, as pointed out by Mark Steinberg, the prelude of platform history is to be found in the preoccupation of early theorists of platforms, "of what they saw as a shift from an automobile-centric industrial economy" to an "information economy."²⁷ The network epistemology played a crucial role in this shift, as Castell's theorization on the "network enterprise" and the "network state"²⁸ representatively illustrates.

detailed parts of the code) that will cause the machine to examine every order it gets and determine whether this order has the structure appropriate to an order of the second machine. It must then contain, in terms of the order system of the first machine, sufficient orders to make the machine cause the actions to be taken that the second machine would have taken under the influence of the order in question. The important result of Turing's is that in this way the first machine can be caused to imitate the behavior of *any other machine*". Von Neumann, *The Computer and the Brain*, quoted in Chun (2011) *Programmed Visions*, 166-167.

25 Womack, Jones, and Roos, *The Machine That Changed the World*, 112. Nobeoka, *Muruchi purojekuto senryaku* [Multiproject strategies], 34. Both quoted in Steinberg (2019), 85.

26 The Toyotist mode of production is a management system that organizes manufacturing and logistics for the automobile manufacturer, including interaction with suppliers and customers. Taiichi Ohno and Eiji Toyoda, Japanese industrial engineers, developed the system between 1948 and 1975. It included the idea of "just-in time" ("Making only what is needed, only when it is needed, and only in the amount that is needed") and automation. See Ohno (1988) *Toyota Production System*.

27 Steinberg (2019) *The Platform Economy*.

28 For a description see Stalder (2006) *Manuel Castells*, 104-140.

Management regards the platform as a hybrid, market-like firm. According to this field, (platform) markets possessed a curious quality: they could be created *ad hoc* by a private company, which would then turn into a gate-maker. The reasoning in this conceptualization is the following: if the company creates a product that, instead of 'only' being sold, can also attract third actors to build their products or services on top of it, then another group of actors may be attracted by these new products or services. In this kind of model, two groups with converging interests are brought together. The advantages are clear. Under the right conditions, instead of insourcing the production of complementary components, these components can be efficiently outsourced under competitive terms. The network effects of these tend to be inherent: like telecommunications, for every new user joining the platform, the value for existing users also increases. Most familiar examples of such markets, also include the ATARI console and the Nintendo Game-boy. Such platforms created markets for the console itself, but also a distinct one for the disc games. Later on, the I-mode Japanese proto-smartphone presented similar characteristics. As such, game consoles are seen as platforms.

Here we already find a discontinuity with the forms of the past: a private firm self-constitutes an internal market in which it sets the conditions of access and use. It is the platform that retains the power to decide who can enter it. This outsourcing has another potential advantage: the chosen product would be the result of competition between other firms, and prices would go down.

From a genealogical point of view, what is important is that, from a certain moment onwards, a separation in the management literature between the *firm* and the *platform* has become necessary: the company can decide to structure itself as a platform. But this shift turned out to be problematic for the very Coesian distinction between market and firm. In this new model, the firm is not seen as a closed box in competition with other black boxes at the same time²⁹; instead, the firm starts to create mercantilist relationships inside itself - precisely what the firm, with the reduction of transactional costs on the inside, was meant to avoid.³⁰

Some years later, software studies scholars³¹ highlighted the re-programmability of platforms. Andreessen famously claimed that most people were using the word platform in the wrong way: Youtube was not a platform, but an 'application', which was a closed environment that could not be reprogrammed by outside developers. Regardless of this debate, the reprogrammability is a crucial characteristic of the digital platform. The enveloped space constituted by the platform itself could now be cybernetically controlled and infrastructurally changed. This increased the

29 Coase (1937), *The Nature of the firm*; Steinberg (2019) *The Platform Economy*, 99. Steinberg then focuses on the management discourse in Japan in the 1990s, and how that actually preceded its euro-American version. Japanese theorists had the advantage of the periphery: they used to read western literature, while westerns academics mostly ignored Japanese theorizations.

30 See the analysis of Casilli, but also that of Castells. In here should be noted that if it is true that platforms constitute a radical break in terms of technological design, organizational form and reprogrammability, they should also be understood historically as a continuation of the trend of financialization of the economy, globalization and outsourcing already started with the rise of multinational corporations. See also the interview with Niels Van Doorn *The Political Economy of Democratic Platformization*.

31 See Anne Helmond's *The Infrastructure and flows of social media platforms* in the present book.

variety for the manager, who could play a role in developing design strategies for achieving the governance of its ecosystem by detecting the very patterns of its multi-sided markets via a continuous re-shaping of its architecture. It also enhanced the cycles of dependencies of third-party developers, as they need to continuously update their products to keep matching the conditions of the platforms.

I have so far attempted to quickly summarize some of the historical steps of what I call the ‘corporate branch’ of platform genealogy: platforms as private enterprises must meet the needs and pressures of the capitalist environment; in order to meet them better, they ended up becoming environments themselves.³² This brings us to the second, cybernetic branch of platformization.³³

To be in hell is to drift: to be in heaven is to steer.

George Bernard Shaw

Cybernetic Branch: Generative Mediations Beyond Traditional Dichotomies

It is in cybernetics that we find the philosophical and organizational aspirations that lead to platformization. In particular, as we will see, there are several elements of platformization that we can trace back to management cybernetics. As rightfully pointed out by Bratton, the genealogy of the platform goes back to the attempts by socialist countries like Chile and the Soviet Union to overcome the inefficiencies of centralized planning and, generally, to regulate life through technology.³⁴ Historically, this also situates the history of the platform within longer trends of Cold War computation and cybernetics.³⁵

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- 32 For the systemic paradigm, system and environment are always necessarily considered together, they are the unity of a difference. This is the foundational paradoxical distinction on which the systemic methodology and theory stand.
 - 33 Cybernetics originated in trying to solve the problem of firing at moving airplanes from another airplane, something that requires two separate calculations: ballistics (hitting a specific point in space and time) and prediction (where that point would be in relation to a fast-flying aircraft). For the history of cybernetics see Rid (2016) *The Rise of the Machines*. Of course, the two branches of management and cybernetics, that here I have divided for convenience, are deeply interconnected; Internet culture itself has started from the mythology of ‘cyberspace’ in places such as the Massachusetts Institute of Technology (where Norbert Wiener was once teaching, but also where some Japanese managers of our story have studied).
 - 34 Bratton (2015) *The Stack*, 332. Another interesting case is the Japanese TRON (The Real-Time Operating system Nucleus), developed since 1984, which was “computer everywhere” infrastructure envisioning a ubiquitous national computer network built on a distributed real-time operating system among a vast network of objects and terminals of multiple scales and complexities, a blend of an Internet operating system and Internet of Things communication formats with ubiquitous ID systems” (59). For the project created by Ken Nakamura see TRON Association (2009) *The TRON Project*.
 - 35 In practice, the state has clearly played an important role in the corporate genealogy in at least two ways: first, a great part of the technology used by digital platforms was developed thanks to the risky state-sponsored research projects, financed by taxpayer’s money; second, because of the “sliding

At the most general level, cybernetics meant a non-modern worldview unfolding in three historical phases. The first metaphysical phase - also called the 'narrow view' of cybernetics - held that the mechanism of negative feedback control is metaphysically central to the order and organization of the universe.³⁶ In the second 'broad view', cybernetics was the acknowledgment that the mechanistic age of matter was over, while the age of form was coming. According to Peter Asaro, this cybernetic movement wanted to replace physics as the science upon which all others would be based: if "physics had promised to give humanity domination over matter and energy, cybernetics now promised to give humanity domination over information and organization."³⁷ In this sense, the age of industry, symbolized by the steam engine, was giving way to the age of information, symbolized by the computer. Cybernetics sought to overthrow the entire scientific order as handed down from Newton, and with it the social and political order. The final and intermediate view - the so-called "second-order cybernetics" - turned itself into an epistemology as the science of observing systems.³⁸ Cybernetics was again defined by feedback, but now it was between a system and its observer, rather than merely within the system being observed.³⁹ According to this final, 'second-order' view, cybernetics was the science that gave priority to relation over substance and difference over identity. It functioned "as a nullifier of traditional dichotomies such as material/life and animal/ human by reconstructing everything as difference/information; it is the horizon where "spirit" and "human" can no longer play their privileged, a priori roles."⁴⁰

For the sake of the present work, I am particularly interested in the application of cybernetics to management as an essential element in the historical, genealogical account of platformization. Cybernetics, in fact, played a central role as a discursive and organizational practice in communist and socialist countries like the Soviet Union and Chile.

doors" of government officials and platform's managers. On the first point see Mazzucato (2018) *The Entrepreneurial State*; on the second, Zuboff (2019) *The Age of Surveillance Capitalism*.

36 Crucially, Deutsch in his *Toward a Cybernetic Model of Man and Society*, saw systems as "self-modifying networks", and by feedback he meant what we have already encountered as the circular cybernetic methodology: "a communications network which produces action in response to an input of information and includes the results of its own action in the new information by which it modifies its subsequent behavior". See Richardson (1991) *Feedback Thought in Social Science and System Theory*, 100-101.

37 Asaro (2010) *What Ever Happened to Cybernetics?*

38 Other authors distinguish between first-order and second-order cybernetics, where the latter is seen, following autopoiesis, as the application of cybernetics to the cyberneticians themselves as observers. In particular, see Von Foerster (2003) *Understanding understanding*. For Hayles, this turned the cybernetic paradigm inside out: instead of seeing the feedback loop as connecting system and environment through information, "we only see what our systemic organization allow us to see. The environment merely *triggers* changes determined by the system's own structural proprieties [...]. The emphasis is now on the mutually constitutive interactions between components of a system rather than on message, signal and information". Hayles (1999) *How We Became Posthuman*, 11.

39 Asaro (2010) *What Ever Happened to Cybernetics?*

40 Karatani (1997) *Architecture as Metaphor*, 18. This aspect was negatively addressed by philosophers such as Martin Heidegger. The ontic character of cybernetics would have led to the 'end of philosophy' - a philosophy no longer preoccupied with ontological problems. Heidegger claimed that the other sciences would have been "determined and steered by the new fundamental science which is called cybernetics". See Heidegger (1977) *The End of Philosophy and the Task of Thinking*, 374.

In the Soviet Union, cybernetics went from being a “reactionary pseudo-science” to a movement geared toward revolutionizing the establishment, and finally a pillar of the status quo itself. For the popular press, computers were even labeled as the “machines of communism”.⁴¹ The Chairman of the Academy Council of Cybernetics once declared that the main task of Soviet cybernetics was “the development of methods and the application of tools for controlling the entire national economy, individual technological processes, and various forms of economic activity to ensure the optimal regime of government [*upravlenie*]”; ‘optimal planning and control’ became a motto of the soviet cybernetic movement.⁴²

Soviet cyberneticians assumed that the main problem of the Soviet economy lay in the inefficient mechanisms of data collection, information processing, and control, and offered a solution based on mathematical modeling and computer-aided decision-making. The different nature of the organization of the communist state was seen as having an inner potential greater than that of capitalist countries. In the latter, different companies created individual automated control systems for themselves, while soviet cyberneticians wanted to organize a unified complex automated system to control the national economy, whose automated effects would be much greater than that from the automation of control of individual enterprises. As Slava Gerovitch has put it, soviet cyberneticians were “looking for a technological solution to an inherently political problem; by its own nature, however, their project was doomed to play a political role.”⁴³

The view of soviet cyberneticians, however, countered many central mechanisms of bureaucratic communism. Soviet ‘economic cybernetics’ wanted to apply Game Theory to the national economy; they envisioned a hybrid planning system that would provide some decentralization of decision-making while preserving the national plan. In this view, optimal planning could be achieved by a radical decentralization of economic decision-making and regulated use of the market mechanism; moreover, computer modeling was supposed to provide quasi-market stimuli for individual enterprises.

In the Soviet Union, however, cybernetics ended up becoming a discursive tool of the establishment. Instead of facilitating the decentralization of power through computer simulation of market mechanisms, computer technology was used to strengthen centralized control and reinforce existing power structures. In 1967, the authors of the fifth volume of *Cybernetics—in the Service of Communism* wrote with pride that

the view of society as a complex cybernetic system with a multi-dimensional network of direct and feedback links and a mechanism of optimization, functioning towards a set goal, is increasingly gaining prestige as the main theoretical idea of the ‘technology’ of managing society.⁴⁴

41 Gerovitch (2002) *From Newspeak to Cyberspeak*, 256.

42 Ivi, 254.

43 Ivi, 260.

44 Ivi, 285.

The project for a national soviet platform was set forward in 1969, when The Central Economic Mathematical Institute (CEMI) proposed to design an information system that would combine several layers: 1) a communication system for fast and reliable collection, distribution, and transmission of information; 2) a computation system; 3) an integrated data-processing system; 4) an information-management system; 5) an information-gathering system; 6) a directive-organization system; 7) an optimization system; 8) an experience-accumulation system; 9) a controlling system, which included the monitoring of all decisions and persons responsible for their implementation, and informing the superiors of the fulfillment (or non-fulfillment) of their decisions at all levels.⁴⁵ As such, Gerovitch concludes, the soviet model emphasized rationalization but neglected the question of democratic control of the state apparatus.

On the contrary, the Chilean socialist government led by Salvador Allende directly faced the question of how to create a techno-democratic state platform. In order to understand how Chile came to ask such questions, it is necessary to pass through whom I consider to be the grandfather of platformization: the great cybernetician Sir Stafford Beer. In his *Cybernetics and Management* (1959), Beer sought homeostatic mechanisms in industry, and he defined cybernetics as “the science of effective organization”. As a cybernetician, the social basis of his theory implied a harsh critique of the modern mechanistic categories for understanding the world, which he perceived as outdated.⁴⁶ According to Beer, categorical knowledge itself suffers from immanent stability, which is a terrible reduction of the world in general, and the new cybernetic world in particular.

In his preface to Maturana and Valera’s *Autopoiesis and cognition*⁴⁷, Beer writes that science itself is ordered knowledge that began with classification, but that modernity has adopted a worldview in which “real systems are annihilated in trying to understand them, in which relations are lost because they are not categorized, in which synthesis is relegated to poetry and mysticism, in which identity is a political inference.”⁴⁸ For Beer, instead, the concept of autopoiesis had groundbreaking philosophical implications. The first is the definitive abandonment of any attempt to find the *essence* of things, the “it” of philosophy, shifting focus to the organizational relations of systems. The second, following Hume’s destruction of the notion of causality, is the destruction of the idea of *teleology*. Beer describes purpose as “a mental construct imported by the observer to explain what is really an equilibril phenomenon of polystable systems.”⁴⁹ With such philosophical premises, Beer suggested managers adopt a future-oriented attitude:

45 Ivi, 284.

46 This was not only the idea of Beer, but, as shown by Gerovitch, also of Soviet scientists who “effectively got rid of a whole set of categories and principles characteristic of the dominant scientific and philosophical discourse.” Gerovitch (2002), 298.

47 The concept of autopoiesis, strictly related to that of emergence, was initially developed to explain how organisms organize and reproduce themselves in time from a biological point of view. Luhmann has applied this conception to social systems by broadening it to “every case in which is possible to determine a specific mode of operation that is found only in that system”. See Baraldi et al (2021) *Unlocking Luhmann*, 39.

48 Beer, *Preface*, 64. “If we are to understand a newer and still evolving world; if we are to educate people to live in that world; if we are to legislate for that world; if we are to abandon categories and institutions that belong to a vanished world, as it is well-nigh that we should; then knowledge must be rewritten.”

49 Ibidem, 67.

It is worth making a tremendous effort to burst through the barrier marked ‘now,’ and to make managers concern themselves with what can be managed—namely the future, however near—rather than peruse a record of what can be managed no longer—namely the past, however recent⁵⁰

In trying to understand how to manage complexity while facing an unknowable outside world,⁵¹ Beer took inspiration from the “living machines” of biology. For instance, the organs of the human body can perform different activities independently of each other, resulting in self-organization. In order to do it, different organs need to black-box⁵² their complexity in recursive⁵³ ontological layers in which both the organisms and the other organs do not know each other’s behavior.

After years of attempts with previous models such as ‘biological computers,’ Beer elaborated on what he called the Viable System Model (VSM)⁵⁴: a universal model for managing complexity in organizations, aimed at transplanting the organic into the social. The VSM was organized fractally in a hierarchy of five systems composed of viable subsystems that had the same five-level structure. Like the soviet cyberneticians, Beer believed that the VSM could balance centralized and decentralized forms of control in organizations; moreover, the computational capacities allowed flows of communication to be structured in a reflexive, second-order computational system. For Beer, the object of the VSM was actually to

reorganize the firm around the computer - to effect a transformation that was social as well as technological, to rearrange the human components as part of an adaptive technosocial system of information flows and transformation.⁵⁵

50 Beer (1981) *Brain of the Firm*, 127. Quoted in Pickering (2009) *The Cybernetic Brain*, 252.

51 Beer distinguished between three kinds of systems: easy, complex, and exceedingly complex.

52 The concept of the black-box is crucial and plays a central role in Beer’s view of exceedingly complex systems, as it is the device for reducing the variety of the system, a ‘device for absorbing variety’. Beer: “Only variety in the control mechanism can deal successfully with the variety of the system controlled.” Here there are relevant differences in the use of the concept of feedback itself: for cyberneticians such as Jay Forrester, it was something needed to understand complexity by quantifying, while for Beer tried “to use the concept of feedback to control a complex system without understanding.” See Richardson (1992) *Feedback thought in social science and system theory*, 173-174. Ashby’s Law of Requisite Variety states that “control can be obtained only if the variety of the controller...is at least as great as the variety of the situation to be controlled.” See Beer (1972), 41.

53 The concept of recursivity – which has been central throughout the present book – has been recently explored as a cybernetic legacy by Hui (2019) *Recursivity and Contingency*. For recursivity in general, see also the beautiful and complicated book of Hofstadter (1999) *Gödel, Escher, Bach: An Eternal Golden Braid*.

54 To which he dedicates his trilogy: *Brain of the Firm* (1981), *The Heart of the Enterprise* (1979), and *Diagnosing the System for Organizations* (1985). In cybernetic terms may say that what has increased the requisite variety of the system, and thus its control. See also the influential conception proposed by political scientist Karl Deutsch (1963) *The Nerves of Government*.

55 Pickering (2009) *The Cybernetic Brain*, 253. Pickering elegantly defines cybernetics as a non-modern ontology of becoming. For the history of computers see Dyson (2012) *Turing’s Cathedral*; for the history of algorithms, Berlinski (2000) *The Advent of the Algorithm*.

In the mind of Beer, however, this sociotechnical apparatus was needed not for maximizing control of the population, but to allow people to be freer than with other forms of organization – what he called the *Liberty Machine*.⁵⁶ With the VSM, he literally aimed at “designing freedom” by creating “a diagram of social relations and information flows and transformations that could serve to guarantee the most freedom possible within organized forms of life.”⁵⁷ In other words, in order to achieve more effective – as well as worker-centered – management, Beer focused on designing the system rather than concentrating on changing the behavior of that system. Crucially, he thus saw the manager as a designer. In his book *Platform for Change: A Message from Stafford Beer* he stated that the sensible course for the manager was to *change* the system’s *structure* – with a modern wording, to reprogram itself – so that its natural systemic behavior became different.⁵⁸

In this sense, the VSM was both *adaptive*⁵⁹ (the various levels of the viable system were intended to be coupled adaptively to one another) and *recursive*. For Beer, recursivity was a necessary property of all viable systems. Systems had to be nested inside one another “like so many Russian dolls or Chinese boxes” in a chain of embeddings that “descends to cells and molecules and ascends to the planet and its universe”⁶⁰. In such a system, humans were positioned “within purposefully designed information flows”; and the “aim of the firm had [...] to be to survive in an environment that was not just fluctuating but also changing—as new technologies appeared in the field of production and consumption.”⁶¹ For the cybernetic firm, policy-making emerged in real-time interaction.

The VSM later became the base for developing the Cybersyn Project, the first digital platform ever created. Designed by Beer and his team in 1971, Cybersyn was made to achieve a cybernetic synergy between man and machine. It turned out to be an unsuccessful attempt to build a socialist, inclusive, techno-democratic system of mediation in which technology was seen as belonging to “the people.”⁶² Cybersyn is also relevant as the best historical attempt in

56 By freedom, Beer meant a programmable function of effectiveness: “But if we raise our eyes to the higher level of the total system in designing government controls, and use the viability criterion to determine the balance point, liberty must be a computable function of effectiveness for any total system whose objectives are known.” Beer (2002) *Fanfare for effective Freedom*, 7.

57 Interestingly, the western press of the time described Cybersyn as a totalitarian instrument of control. As Pickering discusses, this was not the case; however, the entire construction of Beer’s did rely on a “good government” that did not avoid the immanent potential for control of the population made possible by such a technosocial platform. See Pickering (2009) *The Cybernetic Brain*.

58 Beer (1975) *Management in Cybernetic Terms*, in Stafford Beer, *Platform for Change: A Message from Stafford Beer*, 106; emphasis in the original. Quoted in Medina (2011) *Cybernetic Revolutionaries*, 29.

59 Cyberneticians such as Walter and Ashby had created devices with fixed goals that organized their adaptation. The homeostat, for instance, reconfigured itself so as to keep its essential variables within preset limits. On the contrary, Beer’s conception of the VSM specified no goals whatsoever except adaptation itself.

60 Beer (1989), *The Viable System Model: Its Provenance, Development, Methodology and Pathology*, 22. Quoted in Pickering (2009), 250. Recursivity is also an essential feature of platformization: an app such as Facebook can be downloaded from an app store; they are both platforms, and therefore these markets are nested on each other.

61 Pickering (2009) *The Cybernetic Brain*, 244.

62 Eden Medina carefully reconstructed the relationship between technology and politics – with many

which a government explicitly tried to embed selected values in the design of the technological infrastructure. Together with the *Eterea*, it stands as an example of cybernetic socialism,⁶³ as the path not taken by the platform-as-a-state. In particular, with the words of one of the participants in the Chilean experiment, Cybersyn was created to tackle the following issue:

Given a complex system called nationalized industry, subject to very fast changes (size, product design, price policies, etc.), inserted in a broader system (the national economy, inserted in turn in the whole of the national socio-political life), and subject to very specific political boundary conditions, it is required to develop its structure and information flow in order that decision-making, planning and actual operations respond satisfactorily to a program of external demands and the system remain viably⁶⁴.

The Cybersyn system aimed at connecting the nationalized factories thanks to new communications channels. It was composed of four parts. *Cybernet* was what we would today call the ‘data infrastructure’. It consisted of a physical network of cables, telex, telephones and computers that connected nodes such as the state-run factories in order to transmit data about current production to the government. These data were fed into *Cyberstride*, a statistical software program used to synthesize data about factory input and output. The third component, *Checo*, was an economic simulator that used several indexes for allowing policymakers to play with economic models before taking decisions. All of these parts were connected to the control center, named *Opsroom*,⁶⁵ where the government officials would sit. The control center was a futuristic operations room where “members of the government could convene, quickly grasp the state of the economy, and make rapid decisions informed by recent data.”⁶⁶ The control room displayed several screens for visualizing information, called datafeed.

The last part of Cybersyn, only envisioned by Beer but never actually built, was named *Cyberfolk*. In my opinion, it constitutes the most interesting component of the platform, as it

references to values, design, and sociotechnical engineering – in her outstanding book *Cybernetic Revolutionaries*. It is interesting to note that despite all attempts to build it democratically, the only time that Cybersyn actually worked was to track truck drivers striking thanks to the telex machines. However, Cybersyn’s failure also depended largely on the CIA’s successful aid of the *coup d’état* by Pinochet, as revealed by the declassified files of the Nixon presidency.

63 The *Eterea* project is an imagined city where a computer-controlled network of pneumatic tubes connecting individual households with a central distribution and collection hub. It was designed by the architect Celechovsky, who “saw cybernetics as a missing link in the transition from bureaucratic socialism to humane communism” and therefore as “an expansive worldview where everything, from territorial planning to the economy, and from nature to human well-being, was thought of as a system in balance”. See Maros Krivy, *Socialist Cybernetics*, 166. If Celechovsky wanted to automate socialism, Krivy asks the right question: can we socialize automation?

64 Schwember (1977) *Cybernetics In Government: Experience With New Tools For Management In Chile 1971 – 1973*, 81.

65 The book cover of Medina’s book – the control room – lasted as the image and the symbol of the Cybersyn project.

66 Medina (2011) *Cybernetic Revolutionaries*, 6.

masterfully exemplifies worker-centered design choices. Beer moved an early cybernetic critique to mass communication tools such as television: in such systems, communication flowed only in one direction, and “the people could not communicate in the same way with their representatives.”⁶⁷ He thus proposed to create a system for gathering data about the worker’s self-reported happiness. These data would have been sent to the control room anonymously, avoiding the use of polls and surveys about workers – a method that limited or prompted answers by asking pre-determined questions. Beer instead proposed to use a new technology that he called “algedonic meters”, making it up from *algos*, pain, and *hedos*, pleasure. The worker/user simply had to move “a pointer on a dial somewhere between total dissatisfaction and absolute happiness.” For Beer, this design used “the brain as a computer structured and programmed by individuality”⁶⁸ to foster values such as autonomy and participation.

On the general level, all the five components of Cybersyn are familiar to and resonate with modern studies on digital platforms: computational ubiquity; dependence on economic simulators; the development (or expansion) of algorithmic systems to make ‘big’ data sets useful; the integration of feedback loops between the user and the platform; the use of rating systems and interfaces promising to detect user feelings and emotions.⁶⁹ Furthermore, Cybersyn is a very early example of techno-solutionism, attempting to enhance trust in the public sector by delegating it to a human-computer assemblage that would have been better able to determine inefficiencies and discrimination than a class of bureaucrats. It is worth letting Beer speak on the slowness of bureaucracies and on the wrong way of using computers:

We would forget about the bureaucratic planning systems that talk in terms of months and years, norms and targets, and implant a continuously adaptive decision-taking, in which human foresight would be permanently stretched as far in any context as this real-time input of information could take it. Above all, we would use our cybernetic understanding of filtration to deploy computers properly as quasi-intelligent machines instead of using them as giant data banks of dead information. That use of computers taken on its own as it usually is, in my opinion, represents the biggest waste of a magnificent invention that mankind has ever perpetrated. It is like seeking out the greatest human intellects of the day, asking them to memorize the telephone book, and then telling them to man ‘Directory Enquiries’ at the telephone exchange.⁷⁰

Therefore, from the very beginning, Beer’s critique referred to Weberian bureaucracy. This is one of the most relevant points about platforms identified by Bratton: platforms “set the stage for actions to unfold through ordered emergence as opposed to bureaucratic desired

67 Beer (1972) *Project Cyberfolk*, box 61, Beer Collection. Quoted in Medina (2011), 89.

68 Ivi. This is also consistent with contemporary critiques of the GDP as a parameter for quantifying national economies. Proposals have been made to focus on reports such as the *World Happiness Report*.

69 Plastic Pills (2021) *Cybersocialism: Project Cybersyn & The CIA Coup in Chile*, have dedicated an insightful documentary on the topic based on the book of Medina.

70 Beer (2002) *Fanfare for Effective Freedom*, 9. Emphasis mine.

outcomes.”⁷¹ This shift in the relationship between centralization and decentralization – common to capitalism and socialism alike – “radically complicat[e]s any strong distinction between planned and market economies.”⁷² For Bratton, bureaucratic planning used to operate by identifying a potential objective in the future (outcome) and then organizing the means to get there – Weber’s goal rationality. Bureaucracies worked by

premodeling desired outcome and working back to codify interaction that would guarantee this: means are a function of ends. Platforms begin by fixing equally strict means but are strategically agnostic as to outcomes: ends are a function of means.⁷³

Reading platformization with cybernetic lenses sheds a different light on it. In particular, it highlights how contemporary digital platforms, and also the state-based platform – conceived as a technocratic system of mediation made by human and technical components – have historically functioned as re-categorizing machines. Platformization brought a change in everyday taxonomies in which “things reorder themselves according to distant logics of proximity and come to belong to different sets and categories than before.”⁷⁴ Or, as Daniel Markham has put it, the platform does the “work of deciding what categories various things go into”:⁷⁵ selecting the regulation of risks, and allocating the burden of innovation are inherently political activities.

Among the many everyday categories changed by platformization, there is a reconsideration of the concept of *value*, which is precisely what contemporary managers are underlining as the innovation brought by digital platforms. Contemporary management scholars do not reason in terms of ‘commodity value’ – something that, traditionally, stayed with the product – but instead they talk about *architectures of value*.⁷⁶ In other terms, value is something that can be created and organized circularly for emergence, something that recalls the critique moved by soviet cyberneticians to the Marxian concept of value.⁷⁷ Regarding this, Steinberg has shown how Japanese managers were the first to think about value in a way that differed from its traditional, linear understanding. For Netzuno, the model of value from the i-Mode platform – the predecessor of the iPhone – required “a different model of the value chain, one

71 Bratton (2015) *The Stack*, 47.

72 Ibidem, 375.

73 Ibidem, 47.

74 Bratton (2015) *The Stack*, 202.

75 Markham (2021) *The Platform is the Enemy*. This has been traditionally considered the role of philosophy by philosophers such as Kant and Deleuze.

76 I have encountered this definition by attending management conferences. Platform logic shapes what counts as value (for example, in the form of audience attention or engagement) and how that value is measured (whether by clicks, subscriptions, watch time, or a combination of these). See Burgess (2021) *Platform Studies*, 23.

77 For them, economic cybernetics should have been distinguished from the Marxist theory of value. The latter was about political economy, while value was supposed to be ‘objective’ and mathematical: “[The Marxist concept of] value and objective valuations are two completely different and incommensurable things. Value is a category of political economy and objective valuations are an algorithmic formula for the calculation of equilibrium prices in an optimal plan”. Gerovitch (2002) *From Newspeak to Cyberspeak*, 82.

in which there is a circular relation or series of feedback loops between multiple participants in the i-mode project.”⁷⁸ Netzuno wrote that in such a model, they

leave the content creation to the service providers who excel at that; Docomo concentrates on our system for collecting fees, our platform, and signing our data warehouse. This is what we might call our platform concept.⁷⁹

Following Netzuno, Steinberg frames the change brought by the platform mentality as the shift “from making things to making (mediation) mechanisms.”⁸⁰ Leaving the value produced by labor aside, it is the mechanism that produces its own value. The designers, alchemists of the modern world, would carry out this task⁸¹.

In sum, the core elements of the platformization discourse nowadays can be traced back to the cybernetic design elements: the relational ontology of becoming; the destruction of teleology; the changes to bureaucratic planning; the reshaping of the mechanistic categories of modernity; the attempt to design freedom through a techno-democratic system of mediation that allows mutual communication flows between the governed and the governors; the embedding of specific design values in technology. If the cybernetic trench of platformization teaches us something, it is that the platform is not only a business model but a specific form of government (or of governance⁸², if one prefers its contemporary, multi-level definition) presenting historical discontinuities with the past⁸³.

78 Steinberg (2019), 136: “according to Porter’s diagram, the creation of value within a firm moves from left to right, with the farthest right being the one-time intersection of the firm with the consumer via the market. In other words, this model posits one “side” or market, the moment the firm sends its completed product out into the world and into the hands of the consumer.” It is also interesting to compare Porter’s diagram with the image of the Viable System Model for showing their similarity.

79 Natsuno, *I-mode Strategy*, 61–62; for the Japanese version of this English translation, see *I-mōdo sutorateji*, 118–19. Quoted in Steinberg (2019), 138. Steinberg also investigates the crucial relationship between contents – a term that “functioned as the discursive packaging of dematerialized digital goods (“data”) as commodity forms” – and platforms, as “the infrastructural and transactional basis for value creation” (69).

80 Natsuno, *Naze daikigyō ga totsuzen tsuburerunoka*, 80–81. Quoted and translated in Steinberg (2019), 202.

81 In fact, Google’s founders have studied Norman’s *The design of everyday things*, which deploys an ecological approach based on Gibson’s notion of affordances. For instance, The PageRank algorithm used to calculate “the relative respective weight of nodes within a network”. This kind of algorithm can be considered a shift from a mechanical to a dynamical view of indexing: in giving back indexed searches according to the user queries, PageRank did not show a fixed result, but a flowing result based on the popularity of the website, that is, the number and quality of its links. See Ippolita (2013) *The Dark Side of Google*.

82 One should distinguish between government and governance, as the terms signal a different political condition from the Westphalian order. For a discussion on the evolution of governance, see Mayntz (1998) *New Challenges to Governance Theory*; for a discussion of notion of Internet Governance, see Hoffman et al (2017) *Between coordination and regulation: finding the governance in Internet governance*.

83 That is not to hide the capital side of this. For Morozov, most of the power of platforms depends on the insane amount of capital already accumulated. See Morozov’s interview *The Platform Delusion*, in Pandora Rivista, *Piattaforme*, and also Morozov (2022) *Critique of Techno-Feudal Reason*.

Layer 3. A Metaphorology of Digital Platforms

The third layer that I would like to explore is the use of platform metaphors in academic public discourse. It is worth starting with an initial detour through the field of philosophy of language, as the use of metaphors is sometimes seen as not enough analytical, a methods that deceives.

It is already the etymology of the word ‘metaphor’ that points to a process of transport, translation and transportation at the same time. *Meta* means ‘after’, ‘over’, ‘across’, but also ‘changed’; and *pherein*, ‘to bear, to carry’.⁸⁴ The problem is, and always will be, that the metaphor lies:⁸⁵ it shows something, but also hides something, and it creates presence through absence. This is true also for platform metaphors: like Homeric sirens, their seduction usually turns out to be very different at closer inspection.⁸⁶ However, if it is true that metaphors lie, one must acknowledge that they lie in a very peculiar way. Nietzsche understood this when he wrote that, in the end, truth itself is a “movable host of metaphors, metonymies, and anthropomorphisms: in short, a sum of human relations which have been poetically and rhetorically intensified, transferred, and embellished, and which, after long usage, seem to a people to be fixed, canonical, and binding.”⁸⁷ Historically, countless attempts have been made to explain what a metaphor is, as well as to formalize it. But the ‘metaphorical scandal’ is that these attempts have all failed: every definition of a metaphor turns out to be a tautology. In his reconstruction, Umberto Eco shows how a great part of what has been written on the metaphor is a variation on the following sentence: “the metaphor is that artifice that allows to speak metaphorically.”

The metaphor it is not only a rhetorical device, nor does it merely allow for nice analogies between things. For Eco as well as for Aristotle, the metaphor has a *cognitive* value: it is an unavoidable instrument of knowledge, one that founds language itself. The consequence of this idea is that the interpreter, in discovering that the metaphoric expression does not tell the truth, is obliged to interpret it metaphorically, and obliged to assume that the expression should express something else.⁸⁸ Therefore, every definition of metaphor cannot but be circular – a nice circle that we should add to our collection. To use the terminology

However, I agree with Ström (2022) *Capital and Cybernetics*, that there are some specific cybernetic discontinuities to be taken into account: in particular, techno-social projects of the state apparatus are aimed at “the reorganization of social life at a higher level of abstraction.”

84 Van Boomen (2014) *Transcoding the Digital*, 38.

85 I refer to a broad understanding of the metaphor, which includes other rhetorical figures, such as the metonym.

86 See Ossewaarde (2019) *Digital Transformation and the Renewal of Social Theory: Unpacking the new fraudulent myths and misplaced metaphors*, who attempted the ‘debunking’ of some of those metaphors.

87 Nietzsche (1990) *Philosophy and truth*, 84.

88 Aristotle himself valued metaphors, as he wrote that “knowing how to find good metaphors means perceiving or grasping the similarity of things between each other.” See Eco (1984) *Semiotics and the philosophy of language*, 161. See Hesse (1974) *The structure of scientific inference*, for an explanation of the cognitive value of metaphors in the creation of models in science. Hesse proposed a networked model of language according to which semantic nodes are words and predicates, while grammatical rules are links allowing for inter-subjective communication.

of Paul Grice, metaphors imply implicatures:⁸⁹ “there is a metaphor every time something unexplainable happens which the users of a language perceive as a metaphor.”⁹⁰

For Eco, the problem becomes that of discovering what encyclopedic rules the solution of the metaphorical implicature must base itself upon. Since the metaphor puts the interpreter to work,⁹¹ in order to understand it he needs to look into a system of content that he names the ‘encyclopedia’.⁹² For this reason, the success of a metaphor is

a function of the sociocultural format of the interpreting subjects' encyclopedia. In this perspective, metaphors are produced solely on the basis of a rich cultural framework, on the basis, that is, of a universe of content that is already organized into networks of interpretants, which decide (semiotically) the identities and differences of properties. At the same time, content universe, whose format postulates itself not as rigidly hierarchized [...] alone derives from the metaphorical production and interpretation the opportunity to restructure itself into new nodes of similarity and dissimilarity.⁹³

89 The philosophical concept of implicature originated from Paul Grice and belongs to the so-called ‘pragmatic fallacies’: hidden errors depending on circumstances of the context of argumentation. Implicatures are a varied set of conceptual contents that are involved in any utterance and that are activated when someone listens to another who is speaking. They indicate not what a factual statement logically implies but what is understood (incorrectly) by a person who reads or listens. The following example is a case of implying the false by telling the truth: The captain of a ship is worried because the second officer drinks too much, and begins to write every day in the logbook: today the second officer is drunk. The second officer reads the logbook and writes, only once: today the captain is not drunk. The implicit argument is: Today the captain is not drunk, so he is normally drunk. See D’Agostini (2010) *Verità avvelenata*, 156.

90 Eco (1984) *Semiotics and philosophy of language*, 54.

91 This is a crucial point, because this work is both necessary and complex. A simple metaphor that we find in the Bible (Song of songs), referring to a female shepherd, states: “Her legs are as pillars of marble.” To understand the metaphor, the interpreter needs to undertake a hermeneutic circle à la Gadamer. One must assume a code whose metaphorical transformations are appraised in advance; the interpreter has to be familiar with both the biblical poet's aesthetic ideology and the maiden's properties. Therefore, “one learns something extra about the maiden and about the intertextual universe of the biblical poet, simultaneously”. It is a process of trial and error that deals with multiple inferential movements: hypothesis (or abduction), induction, and deduction. See Eco (1984) *Semiotics and philosophy of language*, 101.

92 The concept of the encyclopedia is a semantic and semiotic model that explains the functioning of semiosis and signification. It is distinguished from the tree-based logical structure of the “dictionary” – linear and arborescent – where each word corresponds to one definition. Contrary to classical logic, the encyclopedia registers all possible interpretations, including contradictory and ‘wrong’ statements. From the encyclopedic model, Eco then explains how culture works as a regulatory apparatus, creating connections and paths between elements of the encyclopedia. Moreover, each person builds its own encyclopedia, in a combinatory process of identity building. For the latest version of this theorization see Eco (2007) *Dall'albero al labirinto. Studi storici sul segno e l'interpretazione*.

93 Eco (1984) *Semiotics and Philosophy of language*, 127. The author then explains that “for too long it has been thought that in order to understand metaphors it is necessary to know the code (or the encyclopedia): the truth is that the metaphor is the tool that permits us to understand the encyclopedia better.”

In other terms, the metaphor shows how the encyclopedia is structured; it shows paths in the epistemic network of cultural references. Moreover, there is an unavoidable *pragmatic* dimension to the metaphor: which similarities are to be shown, and which to be hidden? Using a metaphor is mobilizing a metaphor, but accepting that it is a lie that tells the truth⁹⁴ is a specificity of human language as opposed to that of computers. There is no algorithm for metaphors. As they show family resemblances among different concepts, understanding *why* they have been constructed will reveal what they aimed at suggesting.⁹⁵

If a metaphor has a cognitive value that cannot be easily dismissed, I believe there is some value in assessing how metaphors are used in platform studies and platform theory. The point is relevant, as this field – similarly to network theory – has chosen a metaphor to describe its own object of inquiry. The platform is a metaphor described by deploying other metaphors, thus creating recursive metaphors. Perhaps because of the success of the corporate discursive attempt to deceive the public with the platform metaphor itself⁹⁶ (for instance, Steinberg highlights the feedback between platform discourse and platform building,⁹⁷ while Bernard Stiegler has repeatedly compared digital platforms to the new sophists⁹⁸) platform researchers sometimes tend to dismiss it as problematic⁹⁹. However, if a single metaphor

94 As stated in the conclusion of Miéville (2011) *Embassytown*.

95 Eco (1984) *Semiotics and Philosophy of language*.

96 Media studies have a long and rich tradition in dealing with metaphors. According to Friedrich Kittler a medium has three metaphorical functions: processing, transmission, and storage, that together constitute the “discourse networks”. Van Boomen (2014) has reviewed and collected all of these metaphors, dividing them into the three kittlerian categories. For the metaphor of *processing*, she identifies media as a membrane, media as master, mediatization, spaces of media and media ecology (a recombination of membrane, master and space); for that of *transmission*, the media as a channel, media as a conduit, and media as a toolmaker; for the metaphor of *storage*, media as container, and media as inscription. Van Boomen also proposes to move beyond Lakoff’s conceptual theory of the metaphor and instead use Hayles’ ‘material metaphor’, which she redefines as a “metaphorical representation of social relations embodied in a material object [that] assemble and condensate significations that go beyond the functional properties of objects, and beyond an arbitrary symbolic attribution; they assemble and (re)produce specific social relations” (61, 77).

97 Steinberg (2019) *The Platform Economy*. As platforms can be conceived only in temporal terms – what Pickering calls the cybernetic “ontology of becoming” – the discourse on the platform is part of the platform concept. The discourse of digital platforms works more or less as follows: a new technology or technological feature is introduced; since it is impossible for the public to understand how it works before its experimentation, a strategic metaphorical discourse is tailored to what that technology is supposed to be, usually in order to deceive the public and buy some time to experiment with it, in a moment of unsupervised action. Lamarre (2017) *Platformivity*, has called it ‘platformivity’. Given the cybernetic genealogy of platformization – a science that focused on performance rather than representation – and the performative character of code, this should not be surprising. See also Zuboff (2019) *The Age of Surveillance Capitalism*, on what she calls the “dispossession circle”.

98 “Today we have to do with contemporary *hypomnemata*, what Plato did with the *hypomnemata* of the Sophists. You have to know that Aristotle taught rhetoric in Plato’s Lyceum. What is rhetoric? It was the Sophists’ attention-harnessing technology. Aristotle said we have to study the techniques of the Sophists to make them noetic techniques rather than techniques of psycho-technical manipulation” Crogan (2010) *Knowledge, Care, And Transindividuation: An Interview with Bernard Stiegler*, 168.

99 See Wyatt (2021) *Metaphors in Critical Internet and Digital Media Studies*, in which they analyze metaphors such as the cloud, ‘data as oil’ and water-related metaphor (such as the data deluge and

shows only what the author wants to show, can a comparative stack of metaphors – a sort of metaphorology of digital platforms – reveal anything about the platform itself?

The oldest metaphor that we encounter is PLATFORM AS AN ELEVATED STAGE, from which one can speak and be heard, which is to say PLATFORM AS POLITICAL PROGRAM. If this metaphor seems detached and far from the platform as an organization, it designates that the domain in which platforms operate is politics. Such a meaning can still be found in expressions such as “deplatforming”.¹⁰⁰

A very central metaphor - used or implied by virtually all the management literature - is PLATFORM AS A MARKETPLACE (or as a *forum*, or *agora*). It is still largely used in recent contributions of economy scholars:

According to historians, European trade took off at the end of the twelfth century in what is now the North of France, in the county of Champagne. It is in this period that this county started to host regular trade fairs, which lasted for six weeks and rotated among six cities. Merchants came from all over Europe because they were confident that they would meet each other at these fairs. This confidence was instilled by the count of Champagne through his authoritative and clever running of the fairs. Everything was done to provide merchants with a safe and efficient business environment. The count of Champagne actively selected the participants, especially by keeping away dubious businessmen. Once admitted, all participants were on a level playing field, as the count carefully avoided granting any privilege to anyone. The fair locations were fortified, and impartial institutions were put in place to enforce contracts and resolve disputes. The count also guaranteed loans and the replacement of cash by notary bills to settle transactions. In exchange for all these services, the count took a small share of each transaction and quickly amassed a fortune. What the count of Champagne started around 1180 is known today as a “platform”.¹⁰¹

While this metaphor highlights that platforms are matchmakers and multi-sided markets, it hides that the platform is a specific system of governance relying on a specific (algorithmic) normativity and continuous labor of curation and moderation.¹⁰²

data flows). See also the collection of texts of the Alexander Von Humboldt Institute at <https://www.hiig.de/en/dossier/how-metaphors-shape-the-digital-society>.

100 See also Van Dijck et al (2021) *Deplatformization and the Governance of the Platform Ecosystem*, for which deplatforming is actually different from deplatformization.

101 See Belleflamme & Peitz (2021) *The Economics of Platforms*, 10. Emphasis added.

102 This is one of Gillespie's main points: for him, “platforms constitute a fundamentally new information configuration, materially, institutionally, financially, and socially. While they echo and extend traditional forms of communication and exchange, they do so by being, like computers themselves ‘universal machines’ for many different kinds of information exchange. . . moderation, far from being occasional or ancillary, is in fact an essential, constant, and definitional part of what platforms do. I mean this literally: moderation is the essence of platforms; it is the commodity they offer.” Gillespie (2018) *Custodians of the Internet*, 207.

In the field of political economy, multiple different metaphors are employed to refer to platforms. The PLATFORM AS A COORDINATION MECHANISM,¹⁰³ similarly to the marketplace, shows that the platform's core activity is to keep a homeostatic balance between two groups - for instance, app developers and app users - but here the activity of control and the effort that the platform needs to make to keep this coordination are both made explicit. The platform does play an active role in mediating: this is actually its core activity. Moreover, the PLATFORM AS A SHOPPING MALL shows that multi-sided corporate platforms, following the standard capitalist model, are fundamentally rent-seekers. As Jathan Sadowski has put it:

Don't think of the platform as the landlord who owns a rental home. Think of it as the owner of a shopping mall who invests in property in order to facilitate productive activity. [...] The mall's owner takes their cut of the value generated. Whether that value is money added to the price of everything or data about human behaviors and preferences [...]. By investing in the construction and maintenance of property, which "mediates the production and circulation of surplus value", the rentier platforms capture part of that value.¹⁰⁴

According to managers themselves, "the challenge is not what you offer, but how you offer a consistent experience without owning anything or employing anyone—and do it at scale, in thousands of places. That's the magic."¹⁰⁵ However, this (static) metaphor downplays the evolutionary nature of platforms and neglects to account for the fact that established corporate platforms are always actively working to maintain their oligopoly.¹⁰⁶

Similarly, James Muldoon rehabilitates a Marxian metaphor by describing the PLATFORM AS A VAMPIRE. If, according to Marx, the capitalist is extracting value from the worker, the platform extends this extraction logic to all groups in its market, complementors included. In this metaphor, it is important to highlight that the managers and the Marxists are in complete agreement in their understanding of the platform business model. It is only in their normative evaluation that these understandings diverge: the first sees it as a new and viable business model and the second as an intensification of the capitalist's unacceptable practices. What the metaphor is not showing, however, is that value is also created for users. Furthermore, it is interesting to note that in western mythology, the vampire is a species of the genus of the shapeshifter, the metaphor deployed by Niels Van Doorn in the interview. This can be a valuable metaphor, because it shows the unprecedented adaptability of the platform that manages to permeate each sector, in relation to each territory, in a peculiar way.

In software studies, Benjamin Bratton has theorized the stacked model of the platform which encapsulates the mutable form of its organization. Platforms are composed of multiple layers,

103 A coordination that, for Casilli, it is at the same time economic, algorithmic, and systemic. Similarly, Langlois and Elmer (2019) *Impersonal subjectivation from platforms to infrastructures*, talk about the 'orchestration of existence' performed by platforms.

104 Sadowski (2019) *The Internet Landlords*, 8.

105 MIT Initiative on the digital economy (2017), 19.

106 For a study on the attempts of platforms 'overthrow' existing platforms in a dominant position, see Thomas et al (2019) *The future of digital platforms: Conditions of platform overthrow*.

and they present recursive features. So, the metaphor he put forward is the PLATFORM AS A STACK.¹⁰⁷ Similarly, accounting for platform evolution, Bratton also mobilized the metaphor of the PLATFORM AS THESEUS' SHIP, referring to the Greek myth of the paradox of identity and change. This last metaphor is also consistent with PLATFORM AS LEGO which was suggested in the interview by Helmond. According to the authors, the reprogrammability and the modularity of the digital platform are the central elements which - like in a circle - permit the platform to stay the same not in spite of its change, but because of it.

Helmond and Milan have also suggested the metaphor of PLATFORM AS A SQUID. This metaphor was first developed with regard to social media platforms, but it can easily be extended to refer to any complementor that builds services on them. According to this metaphor, the evolving API permits service producers to be captured but remain divided, each one for each tentacle, in a process of taskification.

An older software metaphor is the PLATFORM AS A WALLED GARDEN, which points at its being an enclosed space of human sociality, an artificial creation of an inside and outside that maximizes profit from resources that would otherwise be easily accessible in a non-rivalrous form.¹⁰⁸ Similarly, the PLATFORM AS A GATE-KEEPER often appears paired with the PLATFORM AS A GATE-MAKER.¹⁰⁹ In these metaphors, the focus point is the *ex-nihilo* creation of a market, which is then guarded by the entity that created it.

The metaphor of the PLATFORM AS A SYNTHETIC WORLD¹¹⁰ is one that I find most interesting because it ecologically recombines most of the previous ones. It includes the PLATFORM AS AN ECOSYSTEM metaphor – largely deployed by both academics¹¹¹ and managers – but in contrast to the self-organized nature of an ecosystem, this synthetic world is designed by a centralized entity that coordinates the affordances and can change them according to serendipitous discoveries. Like in video games, users will try to hack the platform(s); precisely from this process, the platform will understand how to patch itself – to reprogram its affordances in order to tame emergence.

107 And also the stack as a metaplatform. One can also build its own stack: see for instance Shapiro (2021) *The Urban Stack: A topology for urban data infrastructures*.

108 But walls are made to block sight, passage, and communication with the outside, while, with Luhmann, we could say that a platform is only operationally closed, and exchanges information through the interface acting as a membrane. It is the interface that gives meaning to the algorithmic dimension of code.

109 Interestingly, Victor Papanek used to think about designers as gatekeepers. See Monteiro (2019) *Ruined by design*, 30.

110 A non-gamified version of this metaphor (the platform as a world) is used by Casilli (2020) *Schiavi del click*, and in reference to the platform's curation, by Balestrieri (2021) *Le Piattaforme Mondo*.

111 On the topic see the work of Tiwana (2013) *Platform Ecosystems: Aligning Architecture, Governance, and Strategy*. Barns (2020) *Platform Urbanism*, 23, has pointed out that "platform ecosystems describe the relationships established by platforms when they 'intermediate' a marketplace or set of existing relationships. The term captures the way platforms tactically reconvene diverse relationships and, by so doing, create dependencies on platform infrastructure."

Finally, adding to this already rich list of platform metaphors, I would like to put forward the PLATFORM AS A CATALYST. This metaphor has been used by Evans while referring to value creation of platforms,¹¹² but it can be extended to the catalysis of user's attention and time management. Following Luhmann's theory of power,¹¹³ this metaphor attempts to highlight the power of platforms operating by reducing complexity via pre-selecting possibilities for its user, performing a selection of selections.

Finally, there is a last reason why I value the use of metaphors in platform theory. The difficulties haunting digitization and platformization research have been pointed out by many: the speed of change makes it hard to deal with a moving object.¹¹⁴ In such a context, metaphors should not only be criticized for what they *aren't* showing; academic research should instead focus on the *production* of useful metaphors. In showing family resemblances between things, I believe that metaphors are not only a necessary passage to account for change, but are better equipped to deal with it. For Aristotle, the best metaphors are those that "show things in a state of activity".¹¹⁵ In other words, platformization implies movement, and movement is understood through metaphors. The use of metaphors precedes and is often a necessary precondition to definitions and categories. However, the main 'open' metaphors are predominantly produced by business representatives and CEOs., and their McLuhanist ethos is part of their cultural hegemony.¹¹⁶

112 Evans (2011) *Platform Economics: Essays on Multi-sided Markets*.

113 For Luhmann, power is the communication medium of the political system that coordinates selections and produces corresponding expectations. It works as a 'generator of motivations'. For the German sociologist, in contemporary societies power cannot be adequately described by traditional theories of power as a cause or as a potential cause. It can be "compared rather with the complex function of a catalyst. Catalysts accelerate (or decelerate) the triggering of events; without themselves changing in the process, they cause changes in the ratio of effective connections (or probability) expected from chance connections between system and environment. Thus, in the end they produce a gain in time – always a critical factor for the construction of complex systems." Luhmann (2017) *Trust and Power*, 114.

114 This is repeatedly discussed by scholars such as Poell, Van Dijck, and Gillespie and Ananny: 'to understand the power and invisibility of platforms [...] we must study how they change'. See Gillespie; Ananny (2016) *Exceptional Platforms*. Quoted in Barns (2020), 16. Interestingly, social system research has always been taking difference, movement, evolution and temporalization as its starting point. Philosophers such as Virilio wrote extensively about dromology (the body of knowledge concerned with the way speed determines the way in which phenomena appear to us). For the French philosopher, speed is not itself a phenomenon but a "relation between phenomena", or an "environment or milieu". See James (2007) *Paul Virilio*, 31, and Virilio (2013) *Speed and Politics*. More recently, it has become the *raison d'être* of the accelerationist movement. See Mackay & Avanessian (eds) (2014) *Accelerationist reader*.

115 Aristotle, *Rhetoric* (1411b25fJ) [Loeb Classical Library], quoted in Eco (1984) *Semiotics and the Philosophy of Language*, 102.

116 McLuhan was critical of "classification" as a method to make sense of electronic media: "Classified data is fragmented and stays in place. My labels say what? The medium ... or the message? These are not easy to classify, nor do they stay in place at all. They're fast-moving entities. They're like electronic particles which are completely non-visual anyway" (*Marshall McLuhan in Conversation with Norman Mailer*, Canadian Broadcasting Corporation 1968). For instance, Microsoft's CEO Nadella has recently stated: "As the digital and the physical world come together, we are creating an entirely new platform layer, which is the metaverse. In a sense, the metaverse enables us to embed computing into the real world and the real world into computing, bringing real presence to any digital space." One is struck by the meaningless elegance of this circular statement, which still maintains the power to potentially drive

We started this work with the notions of speculation and imaginaries,¹¹⁷ and we explored how platforms work as political machines. Let us conclude it in the same way, by focusing on the narrower sense of the word politics as democratic participation in parliamentary politics.

The solution was not to abandon the goal of democratic government, but to design it so that its tendencies toward instability were countered by the form of government itself.

George P. Richardson

Layer 4. Democracy in Wonderland: Speculations on Political Organization

If the network was understood in opposition to the catastrophes of the bureaucratic, centralized party structure of the 20th century, and if that metaphor proved useful more as an epistemology than an organizational form,¹¹⁸ we can detect here a Hegelian *aufhebung* – a process that both preserves and transcends the first two – in the platform organizational model. From here, we may indulge in one last circular movement: it is not only that platformization needs to be democratic, as discussed so far in the interviews; it is also, following the cyberneticians' dream, about platforming democracy¹¹⁹ in such a way as to reinvigorate it while preserving some of its core components.

As such, I set out from a position that considers the immanent potentialities of platformization in terms of renewal not only of democratic practices and participation, but also of the shaky foundation of democratic theory.¹²⁰ I carry out this speculative attempt notwithstanding the

the discourse. See <https://twitter.com/i/status/1455624165201887234>

- 117 For a valuable exercise of imagination see Muldoon (2022) *Platform Socialism*, in which he envisions the creation of a Global Digital Service Organization working within the United Nations as a specialized agency, as well as a Global Wealth Fund. Muldoon also suggests combining the platform cooperative model with the resources and infrastructures available to municipalities, and public-common partnership (PCPs), which “allow local communities and municipal authorities to participate in a joint enterprise” (105).
- 118 See respectively the interviews with Lovink and Beraldo. A classic work in this sense is that of Powell (1990) *Neither Market Nor Hierarchy: Network Forms of Organization*.
- 119 # See the discussion of Aviv (2021) *Towards Platform Democracy: Policymaking Beyond Corporate CEOs and Partisan Pressure*, which also shows the pervasiveness of the platform keyword, which can be paired with many other words and somehow make sense. For a discussion of the power of platforms in relation to many democratic issues such as agenda setting, misinformation and antitrust, see Moore & Tambini (eds)(2018) *Digital dominance*.
- 120 As a citizen and an activist, I always experienced a growing detachment between the story we tell ourselves on how representative democracy works and how it is described in theory. But systemic-inspired research had already pointed out at the end of the '80s that democracy wouldn't be ready to cope with its 'evolutionary risks', and that some 'unforeseen obstacles' had already made inoperative traditional categories such as pluralism, inter-party competition and the sovereignty of the political consumer between competing elites. Much of politics was in the hand of “demoscopic agencies” (i.e. public-opinion assessment), in a sort of teledemocracy. See Zolo (1992) *Democracy and Complexity*.

fact - of which I am well aware - that democracy hasn't kept its promises,¹²¹ and that if we follow the patterns of platformization down the rabbit hole, the most logical conclusion points at a technocratic future and of a 'dark enlightenment'¹²².

As for democratic platformization, we have briefly seen how Cybersyn tried to build what I would define as a system of checks and balances through infrastructure design. Such notions of separation of powers and checks and balances – the principles at the origin of the modern constitutional order - also imply the cybernetic idea of homeostatic equilibrium.¹²³ If these principles were and are so important it is because they tried to solve the problem of deciding the methods and levels of political regulation by subjecting political regulation to itself. As such, political regulation works through a recursive procedure

by which a requirement for 'retro-action' (i.e. participation in — or at least control over — the sovereign decision) exists to benefit the recipients themselves of the sovereign decision. Democracy will thus function as negative feedback on the operation of political power, which has a natural tendency to expand in threatening ways. In this lies the force of the principle of the division of power, which is to be understood not simply as a segmentary differentiation of power functions, but, in somewhat more complex terms, as recursivity and functional self-limitation.¹²⁴

As for platform democracy, so far we have observed what has been called the platformization of the party, which crucially affected the level of the party's internal organization.¹²⁵ Examples range from the Pirate Party¹²⁶ in Germany, DECIDIM in Spain (a platform for participatory

121 For democracy theorist Norberto Bobbio there are several promises that democracy has never been able to keep: the promise of popular sovereignty, drained by bureaucracies; the fact that in a pluralistic society, the *homo economicus* has supplanted the *zoon politikon*, and the individual is deprived of political agency; the increasing gap between complexity and individuals' competences; the impossibility to properly educate the population, resulting in political apathy; the impossibility to remove oligarchic power; the acknowledgment that democratic principles have established themselves only in certain areas; finally, the failure to eliminate invisible power and the *arcana imperii* (among which we can now include machine learning and artificial intelligence). See Bobbio (2014) *Il futuro della democrazia*; Bobbio, (1976) *Quale socialismo?*

122 The parable of Nick Land is a good example of the explosive mix of Silicon Valley ideology, cybernetics, and accelerationism with 'Chinese characteristics'. Happy to see the dawn of a democratic system that at best leads to paralysis and parasitism, Land believes that the future belongs to the corporate government. See Land (2013) *The Dark Enlightenment*.

123 There is the idea of feedback in the Federalist papers, and the very idea of the checks and balances "were a conscious effort to design a system of stabilization feedbacks". Richardson (1991), 64. See Platt (1966) *The Step to Men* for a 'cybernetic' analysis of the Federalist papers.

124 Zolo (1992) *Democracy and Complexity*, 60.

125 Gerbaudo (2019) *The Digital Party*, 4, who has written extensively on the platformization of the party. In particular, Gerbaudo highlights the fact that the 'party platform' (an inversion of the traditional 'platform party') has become process-oriented: there is a subordination of content to process at the cost of the loss of a coherent party line (77).

126 For an interesting overview see Deseriis (2022) *Is Liquid Democracy Compatible with Representative Democracy?*, which takes the Pirate Party as a case study, as well as the work of Adler (2018) *Liquid Democracy in Deutschland*.

democracy), and the Rousseau¹²⁷ platform in Italy. As noted by Paolo Gerbaudo, the platformization of the party reflects the analogy between the mode of production and the mode of organization in every historical era. The political party, in fact, is a “rather pliable organizational template that integrates the forms of organization and communication that are prevalent at the time”.¹²⁸ If for the industrial era it was Fordism, it now is the platform model; and it seems to me that the platform’s generativity simply cannot be ignored in the field of political organization.

The topic is also related to the old idea of the creation of the ‘electronic *agora*’, which has been rightfully addressed as a scientific mirage. Danilo Zolo – a realist of democratic theory – noted

the extreme unlikelihood that the information society will guarantee the preservation of the procedural mechanisms of democracy and the rule of law. Instead, these mechanisms appear to be in increasing danger of being replaced by more efficient forms of the exercise of power, attractive as a result of their ability to ‘manage complexity’ with a more economical use of money, time and attention.¹²⁹

It seems to me that a perspective grounded on the reaffirmation of state politics could directly turn the platform into a more efficient form for the exercise of power. A first speculative scenario may be that all political parties also begin organizing themselves as digital platforms. This would not really allow more direct participation or a less mediated model; rather, as Gabriele Giacomini has argued, it would be a neointermediation by an organization that uses digital technologies to involve citizens with the filter of management and structure.¹³⁰ Or, with Luhmann, we could see it as a continuation of the trend according to which what “was [once] thought of as management by participation becomes participation by management.”¹³¹ It would also not entail the end of the party, but just the transformation of its bureaucracy and the need for adding the platform layer. Citizens could become party members by means of technological protocols rather than by getting a party card, and they could participate in politics through computational devices.¹³²

In this sense, the case of the Rousseau platform can be instructive. In 2009, the new political party Five Star Movement emerged as the anti-system party in Italy. As a party that

127 Which is an explicit reference to Jean-Jacques Rousseau, who believed only in direct democracy: “Sovereignty cannot be represented, for the same reason that it cannot be transferred; it consists essentially in the general will, and the will cannot be represented; it is itself or it is something else; there is no other possibility. The people’s deputies are not its representatives, therefore, nor can they be, but are only its agents; they cannot make definitive decisions”. Rousseau (1994) *Discourse on Political Economy and the Social Contract*.

128 Gerbaudo (2019) *The Digital Party*, 69. This also depends on the circumstance that political parties must already rely on several proprietary platforms for reaching their audience.

129 Zolo (1992) *Democracy and Complexity*, 107.

130 Giacomini (2020) *Da Rousseau a rousseau.it*, 35.

131 Luhmann (1971) *Politische Planung*, 26.

132 There have been already attempts to vote via smartphone in India. See: <https://timesofindia.indiatimes.com/city/hyderabad/in-a-first-in-india-t-develops-smartphone-based-e-voting-app/articleshow/86823760.cms>.

wanted to oppose the establishment, it necessarily contained very different souls: ecologists, disappointed leftists, and pre-fascist middle classes, among others. It initially used blogs and internet websites to reach its audience, and it ultimately evolved into a party-platform which, in the 2016 election, got 32,7% of votes and became the first party in Italy. Even if the Five Star Movement presented structural problems in terms of effective governance, it could not overcome its institutionalization, and it ultimately imploded, its swift rise and the truly new methods it adopted remain significant¹³³. Thanks to Rousseau, registered users could propose drafts of bills, change them and vote for them, as well as select potential members of the parliament.¹³⁴

We were dealing with an attempt to renew the party form in representative democracies in terms of internal organization and political participation,¹³⁵ where: elected representatives would act as mere spokesmen of the party; where the platform would finally allow new ways for the *volonté générale* to emerge; and where a small group of people – those who created the platform in the first place – would have to guarantee the functioning of the platform itself (an inherent, problematic activity)¹³⁶. Hence, we can re-read the functioning of the Rousseau political platform as follows: given a set of users accessing the platform through a computer, these users would first self-organize by dividing themselves between candidates and voters (for example, via self-presentation videos); once elected, parliamentarians would not only be subjected to the rules of the parliament, but also to the standards of the party-platform. In such a fashion, the greater the pool of users, the greater the influence of the platform on the parliamentary discussion.

If this platformization of the political system is at least imaginable, a further distinction becomes necessary. Those parties would have to build their own digital platform, and probably partner with someone for such a purpose. However, at that point, there would be good arguments for the state to claim the right to create the legal and technological infrastructure for such a transition¹³⁷. Public powers have always had a constitutive role in creating and regulating private power with laws on topics such as liability status, the creation of boards of directors, intra-party competition, and others.¹³⁸

133 The declarations of Roberto Casaleggio – founder of the 5star movement – are quite prophetic: “Our experience is proof of how the Internet has made the established parties, and the previous organizational model of democratic politics more generally, obsolete and uneconomic.” See Casaleggio (2018) *A top leader of Italy's Five Star Movement: Why we won*, 39.

134 Other functions include sharing of drafts, fundraising, call to action, and e-learning for users.

135 See Giacomini (2020) *Da Rousseau a rousseau.it*, 4. For an in-depth exploration of representative democracy see the work of Urbinati (2006) *Representative Democracy: Principles and Genealogy*.

136 There were technical problems regarding the voting procedures, their timing, their exclusive control by Casaleggio and Associati, and the asymmetries of information on voting.

137 I exclude that the platform cooperative model can work here. That is not to say that it is not a valid model; it is in fact the best alternative in many other areas. But I do see political organization, both for its importance and its scale, as an area where the need to have shared rules makes state intervention the lesser evil. Foreshadowing a future “like China” constitutes the rhetorical fallacy of the slippery slope.

138 That the state should take care of the intra-parties’ competition from a constitutional perspective is now widely accepted. For Duverger (1957) *Political Parties*, 263, “when there is neutrality, the pluralism of parties is natural: the state respects all moral systems and ideals, and therefore all the parties which

The second speculation would then foresee the creation of a European and statal metaplatform to which other interoperable party-platforms could connect to. Such a platform – we may address it as the *Platform of politics* – would resemble a parliament developed on the affordances of the computational era rather than on those of the Gutenberg Galaxy. Putting aside the serious problem of security for a moment, this metaplatform could be also used, thanks to authentication systems, to create those utopic ‘permanent advisory referendums’ via smartphone. Aggregated data could play a role in expressing the will of those citizens-users to be taken into account by the government, in an attempt to make political participation easier and quicker, and to quantify public opinion in ways different from polls. Such a reduction of complexity would have to be itself determined by a democratic discussion, and not limited to the choices of individual parties; it would mean working collectively on determining parameters of legibility¹³⁹ suited to a democratic political system.

At this point, a further and more significant problem would be that of collective decision-making inside the platform. It would be here that concepts such as liquid democracy could be further explored. In the same year as the discovery of the platypus egg, Lewis Carroll – pseudonym of Charles Dodgson, author of *Alice in Wonderland* – published a pamphlet named *The Principles of Parliamentary Democracy*. He speculated about a ‘delegative democracy’ in which citizens could decide either to directly vote on policy issues or to delegate their vote to a representative. Now known and developed as ‘liquid democracy’ or ‘proxy voting’, those forms try to combine representative and direct democracy together in decision-making.¹⁴⁰ In the attempts to renew democracy, a parallel debate has explored the use of sorting.¹⁴¹ This model hasn’t been fully explored by applying the new computational model to it. It is an undoubtedly paradoxical model in which – like for Cybersyn – a more technocratic form of mediation is needed to afford a more ‘effective’ democratic participation¹⁴².

defend them. Its role consists solely in *deciding the conditions of their rivalry* and in preventing one from absorbing the others.”

139 In the sense of Scott (1998) *Seeing like a State*. There have been several attempts to describe how legibility has changed by digitization. Julie Cohen discusses it in the first chapter of *Between Truth and Power* (2019). See also Chilson (2021) *Seeing (Platforms) Like a State*, and my Cristofari (2022) *Bratton and the Double Movement of State Platformization and Platform Institutionalization*, for an analysis of Scott’s book.

140 For an overview, see Blum & Zuber (2016) *Liquid Democracy: Potentials, Problems, and perspectives*, who distinguished possibilities to combine direct voting on policy issues with flexible delegation (for everything or only on certain policies and areas), meta-delegation (delegation of delegation), and the principle of instant recall (withdrawing the delegation). Hence, it is an attempt to create a more sophisticated system than the voters/representative one. Liquid democracy, however, “puts high demands on ordinary members of the political community who are expected to select competent experts on the epistemic account and to choose representatives that best further their subjective interests on the equality-based account” (164). According to the advocates of liquid democracy, this would lead to a greater capacity for mobilizing policy area expertise, because of *policy area-specific representation*. For a discussion of the term, see Valsangiacomo (2022) *Clarifying and Defining the Concept of Liquid Democracy*.

141 Mulvad & Popp-Madsen (2021) *Sortition-Infused Democracy: Empowering citizens in the age of climate emergency*; Urbinati; Vandelli (2020) *La democrazia del sorteggio*.

142 My ideal model of liquid democracy is therefore far from a horizontal grassroots model. Morozov had already criticized liquid democracy for its “fundamentalist conception of representation”: “being

As such, platformization is not only a threat to traditional democratic politics: it rewrites what politics is. As we have seen, this has always been the dream of cyberneticians. A dream lost in the non-linear folds of history and operationalized by platform corporations; one that turned a communist utopia into a capitalist dystopia and “ended up a pragmatic management device.”¹⁴³

Far from being Arendtian self-realization of the human being as citizens, such politics is a continuous choice regarding the design and update of the system of mediation. As infrastructure scholars have pointed out, we need to invert our commonsense notion of politics: what has often been seen as “behind-the-scenes, boring, background processes are actually the real work of politics and knowledge production”.¹⁴⁴ As we increasingly tend to satisfy basic needs in cybernetic spaces in which morphology has preeminence over action, the paradox that arises is how to make this technostucture¹⁴⁵ a democratic, participatory and emancipatory project.

The very category of the subject (which acquired that name for being subjected to the law) seems to lose its grasp in comparison to that of the user - a position within a system without which it has no role or essential identity¹⁴⁶ - in a process of impersonal subjectivation.¹⁴⁷ It is the reorganization of social life that passes through a higher level of abstraction¹⁴⁸, one that gives owners of the platform itself – the corporation, the government, the organization – the potential to manage users and producers of services by structuring communication. This may very well end up further reinforcing the *human use of human beings* that Wiener had foreseen as a potential consequence of computation; and cyberneticians got it first when they realized that, “instead of the laboratory being barricaded off from the world, the world would have become a laboratory.”¹⁴⁹ In a cybernetic fashion, then, the question is not what is the societal and political impact of digital platforms, but rather: what are society and politics, now that platforms are in place?

successful at party politics requires a very different set of skills, attitudes, and organizational structures than successfully editing Wikipedia; small and tiny contributions by everyone might be enough to produce a decent article, but they may not be enough to build an effective political party.” See Morozov (2013) *To Save Everything, Click Here*, chapter 4. For an interesting (re)discussion of political organization between hierarchy and networks – one that, however, leaves the media aspect aside – see Nunes (2021) *Neither Vertical nor Horizontal*.

143 Gerovitch (2002) *From Newspeak to Cyberspeak*, 302.

144 Bowker & Star (1996) *How Things (Actor- Net)Work: Classification, Magic and the Ubiquity of Standards*, quoted in De Nardis (2014) *The Global War For Internet Governance*, 6.

145 For a discussion of technocracy, see Winner (1978) *Autonomous Technology*.

146 Bratton (2015) *The Stack*, 251.

147 Langlois & Elmer (2019) *Impersonal subjectivation from platforms to infrastructures*.

148 Ström (2022) *Capital and Cybernetics*.

149 Bowker (1993) *How to Be Universal: Some Cybernetic Strategies*, 123.

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BIOGRAPHIES

Davide Beraldo is Assistant Professor of New Media, Data and Information in the department of Media Studies and in the Institute for Logic, Language and Computation at the University of Amsterdam. He holds a PhD (cum Laude) in Sociology from the University of Amsterdam and the University of Milan – La Statale (joint degree). His research deals with: the relation between digital media, datafication, and social movements; methods to study political bias in algorithmic systems; the relation between semiotic ambiguity and digital communication. Davide's interests lie at the intersection of a number of fields, including critical data/algorithm studies; social movement studies; computational methods; epistemology of complexity.

Balázs Bodó, PhD, Associate Professor, socio-legal researcher at the Institute for Information Law (IViR) at the University of Amsterdam. He was a Fulbright Visiting Researcher at Stanford University's Center for Internet and Society in 2006/7 and a Fellow at the Center between 2006 and 2012. In 2012/13 he was a Fulbright Fellow at the Berkman Center for Internet and Society at Harvard University. In 2013 he moved to Amsterdam as a Marie Curie Fellow at the Institute for Information Law (IViR) at the University of Amsterdam. In 2018 he received an ERC Starting Grant to study the legal, and political implications of blockchain based technologies, and started the Blockchain & Society Policy Research Lab. He has been invited by the European Commission to serve as an expert for various blockchain related projects. In 2019 he has been a senior visiting fellow at the Weizenbaum-Institut für die vernetzte Gesellschaft, Berlin. His academic interests include copyright and economics, piracy, media regulation, peer-to-peer communities, shadow libraries, digital archives, informal media economies, and similar regulatory conflicts around new technological architectures.

Letizia Chiappini is an urban sociologist and holds a PhD with a double affiliation at the University of Milano Bicocca and the Universiteit van Amsterdam. Her research interest revolves around the relationship between cities and technology. The main effort is to theorize the relationship between digital platforms and the urban realm, touching upon hyped phenomena such as 'sharing economy' and 'maker movement'. She is the co-editor of *The Critical Makers Reader: Collaborative Learning with Technology* (2019) at the Institute of Network Culture; *The Production of Alternative Urban Space* (2018) at Routledge; and *Enabling Urban Alternatives* (2018) at Palgrave Macmillan. She is currently a lecturer of Creative Business at the University of Applied Science in Utrecht. She also is the co-founder of the collective *Slutty Urbanism*, which was part of the 2021 Architecture Venice Biennale within the Austrian Pavilion.

Gianmarco Cristofari is a lawyer and PhD candidate in "Global Studies" at the University of Macerata, Italy. He worked as a consultant in data protection and labor law in Rome and Vicenza. His multidisciplinary interests include the evolving relationship between democracy and platformization; social system theory, and political ecology. He published academic contributions in data protection, Deleuzian philosophy and Luhmann's system theory.

Niels van Doorn is Associate Professor in New Media & Digital Culture at the University of Amsterdam. He leads the ERC-funded *Platform Labor* research project, which examines how platforms are transforming labor, social reproduction and urban governance in post-welfare cities.

Anne Helmond is Associate Professor of Media, Data & Society at Utrecht University. In the research focus area Governing the Digital Society she examines the processes of datafication, algorithmization, and platformization from an empirical and historical perspective. She is a founding member of the Digital Methods Initiative and App Studies Initiative research collectives where she focuses her research on the history and infrastructure of social media platforms and apps. In her dissertation on ‘The web as platform: Data flows in social media’ (2015), Anne developed the notion of “platformization” to conceptualize the rise of the platform as the dominant infrastructural and economic model of the web and its expansion and integration into other websites, apps, and industries. Her research interests include digital methods, software studies, platform studies, platformization, app studies, and web history.

Joris van Hoboken is Associate Professor at the Institute for Information Law (IViR), Faculty of Law, University of Amsterdam and a Professor of Law at the Vrije Universiteit Brussels (VUB). He works on the intersection of fundamental rights protection (privacy, freedom of expression, non-discrimination) and the regulation of platforms and internet services. Joris won the Erasmus study prize for his PhD thesis on search engines and freedom of expression in 2013. He has conducted research for the European Parliament, the European Commission, ENISA, UNESCO and the Dutch government and is leading projects on the regulation of online content moderation, and the law and governance of quantum technologies.

Paddy Leerssen is a postdoctoral researcher at the Institute for Information Law (IViR), University of Amsterdam.

Geert Lovink is a Dutch media theorist, internet critic and author of *Uncanny Networks* (2002), *Dark Fiber* (2002), *My First Recession* (2003), *Zero Comments* (2007), *Networks Without a Cause* (2012), *Social Media Abyss* (2016), *Organization after Social Media* (with Ned Rossiter, 2018), *Sad by Design* (2019) and *Stuck on the Platform* (2022). He studied political science at the University of Amsterdam (UvA) and received his PhD from the University of Melbourne in 2003. In 2004 he founded the Institute of Network Cultures (www.networkcultures.org) at the Amsterdam University of Applied Sciences (HvA). He was a media theory professor at the European Graduate School between 2007-2018, and was appointed Professor of Art and Network Cultures at the UvA Art History Department in December 2021.

Stefania Milan is Professor of Critical Data Studies at University of Amsterdam, and Faculty Associate at the Berkman Klein Center for Internet & Society, Harvard University. Her work explores the interplay between digital technology and data, political participation and governance, with focus on infrastructure and agency. Stefania leads the project “Citizenship and standard-setting in digital networks” (in-sight.it), funded by the Dutch Research Council. She is also Co-Principal Investigator in the Marie Skłodowska-Curie Innovative Training

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Niels ten Oever is a postdoctoral researcher with the ‘Making the hidden visible: Co-designing for public values in standards-making and governance’-project at the Media Studies department at the University of Amsterdam. Next to that, he is a research fellow with the Centre for Internet and Human Rights at the European University Viadrina, non-resident fellow with the Center for Democracy and Technology, affiliated faculty with the Digital Democracy Institute at the Simon Fraser University, and an associated scholar with the Centro de Tecnologia e Sociedade at the Fundação Getúlio Vargas. He also holds the position of Vice-Chair for the Global Internet Governance Academic Network. His research focuses on how norms, such as human rights, get inscribed, resisted, and subverted in the Internet infrastructure through its transnational governance.

Thomas Poell is Professor of Data, Culture & Institutions at the University of Amsterdam, program director MA Media Studies, and director of the Research Priority Area on Global Digital Cultures. His research is focused on the digitisation of cultural institutions in the light of the proliferation of data, the growing importance of AI, and the rise of major platform corporations. He explores how these developments lead to creative and economic upheaval in the news, music, games, and lifestyle industries, as well as to a reorganization and rethinking of museums, libraries, and archives. Together with Olav Velthuis, he is currently leading an NWO-funded research project on *The platformization of the global sex industry*. Poell is co-author of *Platforms and Cultural Production* with David Nieborg and Brooke Erin Duffy (Polity, 2021) and *The Platform Society* with José van Dijck and Martijn de Waal (Oxford University Press, 2018). Furthermore, he co-edited *The Sage Handbook of Social Media* (Sage, 2018), *Social Media Materialities and Protest* (Routledge, 2018), and *Global Cultures of Contestation* (Palgrave/McMillan, 2017).

Giovanni Rossetti is a Media Studies Research Master’s student at the University of Amsterdam. His research focuses on the platformization of labor with a particular interest in the historical and cultural trajectories that drive and shape it. He is also interested in exploring how workers’ organizations and the process of platformization mutually challenge and affect each other. He has conducted ethnographic research with platform workers (especially food-delivery riders) in Argentina, Italy, and the Netherlands.

Martijn de Waal is a professor in Civic Interaction Design at the Amsterdam University of Applied Sciences. His work focusses on the design of (on- and offline) public spaces in a network society. He co-authored books such as *The City as Interface. How New Media are Changing the City*; *The Platform Society. Public Values in a Connective World* (with Jose van Dijck and Thomas Poell) and *The Hackable City. Digital Media and Collaborative City-Making in the Network Society* (co edited with Michiel de Lange). In 2009 he was a visiting scholar at the MIT Center for Civic Media, and in 2021 he was the general chair of the Media Architecture Biennale.

Theory on Demand #48

The Politics of Platformization: Amsterdam Dialogues on Platform Theory
Interviews by Gianmarco Cristofari — Illustrations by Carlotta Artioli

What is platformization and why is it a relevant category in the contemporary political landscape? How is it related to cybernetics and the history of computation?

This book tries to answer such questions by engaging in multidisciplinary dialogues about the first ten years of the emerging fields of platform studies and platform theory. It deploys a narrative and playful approach that makes use of anecdotes, personal histories, etymologies, and futurable speculations to investigate both the fragmented genealogy that led to platformization and the organizational and economic trends that guide nowadays platform sociotechnical imaginaries.

The dialogues cover fields such as media studies, software studies, internet governance, network theory, urban studies, social movement studies, political economy, management, and platform regulation. The interviews are set up to develop a network of internal cross-references that highlight the multi-layered connections from which platform power emerges.

In conversation with: Davide Beraldo and Giovanni Rossetti; Balázs Bodó; Letizia Chiappini; Niels van Doorn; Anne Helmond; Joris van Hoboken; Paddy Leerssen; Geert Lovink; Stefania Milan; Niels ten Oever; Thomas Poell; Martijn de Waal.

ISBN: 9789492302984

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network cultures