

# Disruption, Embedded. A Polanyian Framing of the Platform Economy

Gernot Grabher\*

Jonas König†


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## Abstract

Digital platforms disrupt — not just incumbent industries, but also academic imaginations about the future course of capitalism. While some scholars envision the next great transformation towards the ultimate marketization, others anticipate a post-capitalism based on digitally revitalized notions of community and reciprocity. Starting from this controversy, the article advances a Polanyian perspective to push beyond the ostensibly antagonistic dynamics of more or less market. More specifically, the emergence of digital platforms is perceived from the angle of three key drivers that propelled the great transformation towards marketization: technology, science, state. While the break-through of marketization, in Polanyi's view, was prompted by the steam engine, the emergence of platforms is driven by the digital infrastructures of cloud computing, big data and algorithms; and while markets were scientifically legitimized by economics, platforms deploy network theories that, through their far-reaching application, perform social reality. Just like markets, however, platforms are nothing natural, but are objects of ongoing political contestations that forge the embedding of the platform economy into the regulatory framework of society.

**Keywords:** Platform economy; sharing economy; Karl Polanyi; embeddedness; performativity.

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\* Research Unit Urban and Regional Economics, HafenCity University Hamburg (Germany);  
✉ [gernot.grabher@hcu-hamburg.de](mailto:gernot.grabher@hcu-hamburg.de);  <https://orcid.org/0000-0002-2911-9254>

† Institute for Urban and Regional Planning, Technical University Berlin (Germany);  <https://orcid.org/0000-0003-4173-7108>

## 1 Sharing Euphoria, Platform Disillusions

It all began as promise. Soon after the financial crisis of 2008 a sense of awakening seemed to capture academic imaginations. Even traditionally skeptical camps of social science could not resist to ruminate on an alternative to neoliberal capitalism: *sharing*. Rather than echoing the long-gone victim of the “tragedy of the commons” (Hardin, 1968), sharing suddenly held the promise of a (digital) revitalization of exchange based on reciprocity and community (Benkler, 2004; Belk, 2015). The mantra of the new digital sharing economy, “what’s mine is yours” (Botsman & Rogers, 2010), presented the prospect of reinvigorating social connectivity through the collaborative utilization of idle resources (Frenken & Schor, 2017). Although the initial hopes have darkened since early exemplars of the new sharing economy have disappeared (like time banks or food swaps, for example) (Schor & Cansoy, 2019), the notion of sharing still inspires aspirations for a post-capitalist project (Fitzmaurice et al., 2020; Martin, 2016).

More recently, though, a line of reasoning has gained increasing momentum that starts from a diametrically opposed vantage point (Pasquale, 2017; Kirchner & Schüßler, 2020). Instead of a post-capitalist alternative rooted in the social practice of sharing, this line of reasoning anticipates a capitalism supercharged by the compulsive business logic of *platforms* (Parker, van Alstyne, & Choudary, 2016; Van Alstyne, Parker, & Choudary, 2016). Whereas the imaginations of a new sharing economy revolve around societal *values*, the conceptions of the platform economy center on commercial *value*. And in terms of (market) value, the four leading platform companies, Alphabet, Amazon, Google and Microsoft, indeed, constitute one of the more exclusive corporate clubs: their market capitalization exceeds \$1trn (*The Economist*, 2020a).<sup>1</sup> Moreover, the valuation of the highest rated start-ups is, first and foremost, testimony of the approving assessment of their platform business model (Evans & Schmalensee, 2016, p. 8).

Although both positions appear categorically irreconcilable, they converge on two conjectures. First, both perspectives attribute profound economic and societal shifts to the affordances of the novel digital infrastructures of cloud computing, big data, and algorithms (Kenney & Zysman, 2016; Plantin & Punathambekar, 2019). The proliferation of these digital infrastructures has long expanded beyond the sphere of commerce and transformed modes of interaction and sociality in a paramount fashion (van Dijck, van Poell, & de Waal, 2018). Reducing this digital penetration to a mere advancement along the established trajectory in terms of speed and efficiency utterly misses the point (Sampere, 2016). At stake is rather a fundamental transformation of the social and economic fabric through novel modes of algorithmic power and control (Gillespie, 2018; Zuboff, 2019).

Second, both strands of reasoning problematize fundamental shifts in the interrelation between economy and society albeit, of course, with antithetical apprehensions (Dobusch, 2019). While sharing is expected of re-introducing “collaborative social forms able (...) to embed economic relations within social ones” (Pais & Provasi, 2015, p. 347), the “platform revolution” (Parker, van Alstyne, & Choudary, 2016) is expected to propel a further marketization of wider societal spheres (Murillo, Buckland, & Val, 2017; Fitzmaurice et al., 2020). The sharing-*vs*-platform controversy, then, is but the culmination of ongoing scientific endeavors to come to terms (quite literally) with emerging modes of socio-economic coordination that cannot be mapped on to the existing register of governance mechanisms in a straightforward fashion

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1. Together with the fifth major platform corporation, Facebook (with a market capitalization of a mere \$620bn), these companies make up almost a fifth of the value of the S&P 500 index of American shares (*The Economist*, 2020b).

(Reischauer & Mair, 2018; Altman, Nagle, & Tushman, 2019). The promulgation of notions like “platform logic” (Andersson Schwarz, 2017), “platform society” (van Dijck, van Poell, & de Waal, 2018), “platform capitalism” (Langley & Leyshon, 2017a; Srnicek, 2017) or, for the current context most aptly, “platform economy” (Kenney & Zysman, 2016; Kenney, Bearson, & Zysman, 2019) is aimed at indicating the novelty of the emerging socioeconomic coordination.

## 2 History Does Not Repeat Itself, or: Why Polanyi?

This article seeks to contribute to the conceptualization of the emerging platform economy by drawing inspiration from a most authoritative analysis of an earlier fundamental shift in the development of capitalism: *The Great Transformation* by Karl Polanyi (1957). The engagement with Polanyi’s analysis of the breakthrough of industrial capitalism, of course, is not simply a concession to the semantic affinity between the current mantra of “disruption” and the assertive title “great transformation”. History does not repeat itself (although it does rhyme, as Mark Twain famously quipped). Nor is our recourse to Karl Polanyi’s *opus magnum* intended to insinuate that *The Great Transformation* provides the script through which the current transformation can be deciphered in an unambiguous fashion. Rather than forcing Polanyi’s historically grounded framework onto a novel reality, we seek to advance a particular Polanyian *perspective* (Peck, 2013a; 2013b; Ebner, 2015; Jessop & Sum, 2019; Berndt, Rantisi, & Peck, 2020a).

We are acutely aware of the conceptual challenges of such an enterprise since Polanyi’s writing rather represents a “pattern of thought” (Polanyi Levitt, 1990, p.1) than a fully coherent theoretical edifice.<sup>2</sup> We aim at meeting this challenge by triangulating our approach with diverse perceptions in the widely ramified Polanyi-exegesis literature. In general, our chief concern, following Rankin (2013), is rather to pose generative questions than to present terminal answers. Instead of submitting a finely granulated empirical account we are, more precisely, intent on proposing conceptual trajectories for further inquiry. Read as “a theorist of discontinuity” (Block & Somers, 2017, p. 380), Polanyi offers two general insights that inform our perspective on the emerging platform economy.

First, Polanyi traces back the rise of the market economy to a complex alchemy of political, societal, institutional and technological ingredients (Krippner, 2001; Deutschmann, 2019). Markets are not simply a manifestation of an intrinsic predisposition for individualistic utility maximization, as (classical) economics promulgate (see also North, 1977). Rather they are expressions of an intricate interplay between technological affordances, performative effects of science, and deliberate efforts to furnish political and societal institutions. Our Polanyian perspective, then, is framed around the role of technology, science, and the state in forging the platform economy.

Second, Polanyi insists that both fully self-regulated as well as completely disembedded markets never existed (Block, 2001; Peck, 2013a). While perfect markets might exist in the realm of fictive models, reality is made up of multiple variations of socio-economic coordination that co-exist and conflict with each other (Berndt, Rantisi, & Peck, 2020a; Jessop & Sum, 2019, p. 157).

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2. There is a rich body of work in the ramified exegesis literature devoted to the conceptual ambiguities and inconsistencies in Polanyi’s writing that compellingly alerts to the intricacies of “employing” Polanyi in a forthright manner (see, for example, Hechter, 1981; Block, 2001 & 2003; Krippner & Alvarez, 2007; Peck 2013a & 2013b; Dale, 2016; Hodgson, 2017; Deutschmann, 2019, ch. 2).

A Polanyian perspective, in consequence, suggests to push beyond the binary categories of market and non-market in conceptualizing the emerging platform economy. Polanyi's reasoning, in fact, insinuates a particular analytical sensitivity towards variegation and hybridity since, as Cangiani (2011, p. 192) maintains, "[t]he history of capitalism cannot be reduced to a mechanical oscillation from a less to a more embedded economy". Nor can economies "lined up on a unidirectional track towards 'full' marketization", as Peck (2013a, p. 1541) adds.

We seek to advance a Polanyian perspective on the platform economy through the following analytical steps. In the next section we elaborate Polanyi's understanding of the historical contingency of the various modes of socio-economic coordination by drawing particular attention to the foundational elements of his framework: embeddedness and the double movement. In section 4, we elaborate the historically specific manifestations of technology, science and state that brought forth the great transformation towards industrial capitalism. After elaborating key features of platform-based governance in section 5, we employ the proposed Polanyian perspective to conceptualize the proliferation of the platform economy in section 6. The focus of our inquiry thus shifts from the role of the steam engine, classical and political economy and the liberal state in *The Great Transformation* to the impacts of digital infrastructures, network sciences and the neoliberal state on the formation of the platform economy. Section 7 summarizes key insights that the proposed Polanyian perspective yields and offers some general conclusions.

### 3 From Historical Account to Analytical Perspective: Embeddedness and Double Movement

During the more than seventy years that passed since the publication of *The Great Transformation* in April 1944, Karl Polanyi kept an enigmatic presence in various strands of the social sciences (Peck, 2013a, p. 1536). With the exception of John Dewey's euphoric response, the initial reception and influence remained rather limited (Aulenbacher, Bärnthaler, & Novy, 2019, p. 105). The renaissance started in the 1980s (Polanyi Levitt, 2019) and invoked what Dale (2010) and others referred to as the "soft" Polanyi, the theorist of social embeddedness and institutions that was mostly read through the lens of the new economic sociology and Mark Granovetter's (1985) seminal translation in particular. This embeddedness moment was followed by the neoliberal moment that called upon the "hard" Polanyi (Dale, 2010), the prophetic "critic of neoliberalism *avant la lettre*" (Peck, 2013b, p. 1545). The current confluence of the business obsession with the disruption of incumbent industries and established institutions together with the re-emergence of far-right policies and (at least rhetorical tributes to) the climate crisis seem to galvanize the latest wave of interrogations of the "hard" Polanyi (see, for example, Block & Somers, 2017; Brie & Thomasberger, 2018; Aulenbacher, Bärnthaler, & Novy, 2019; Berndt, Rantisi, & Peck, 2020a).

*The Great Transformation*, evidently, centers on a specific historical period: the breakthrough of self-regulated markets as both distinct and dominant mode of socio-economic coordination. Polanyi dates this transformation to the early modern period of the nineteenth century, and pins it down in England. He is, however, explicit in conceiving markets not as a novel mode of economic coordination, but insists that markets in earlier times had been rigorously controlled and regulated by norms, rules and social authority: "Though the institution of the market was fairly common since the later Stone Age, its role was no more than incidental to economic life" (Polanyi, 1957, p. 45).

In marked contrast to classical economics and utilitarian philosophy, Polanyi's conception of the market does not resonate with the smooth accounts of innovation and welfare gains driven by rationalistic behavior. Rather, the ascent of self-regulated markets, as Polanyi elaborates (in the first sections of *The Great Transformation*) is propelled by machinery (or technology, in more contemporary parlance) and science. Importantly, these drivers are not (quasi-naturally) emerging, but in fact socially constructed: "The gearing of markets into a self-regulating system of tremendous power was not the result of any inherent tendency of markets toward exorcism, but rather the effect of highly artificial stimulants" (Polanyi, 1957, p. 60).

Polanyi continues by framing the countervailing forces that are opposed to marketization and that stipulate social protection (Polanyi, 1957, p. 79) as "double movement" (in the second section of *The Great Transformation*). Polanyi's concept of the double movement has frequently been narrowed down to a quasi-automatic and self-protective reflex against unbound marketization. This position does not only glance over the rather inconsistent and contradictory nature of historical counter-movements against early industrialization (Thompson, 1963, pp. 234–235). Moreover, the prevailing mechanistic view of double movements (Block, 2003, pp. 285–290; Deutschmann, 2019, pp. 20–22) neglects that political forces opposing the market are not per se progressive, but potentially "endanger society in yet another way" (Polanyi, 1957, p. 4). Polanyi's notion of the double movement impedes the complete decoupling of the economic from the political and societal sphere, and the "perfect" market remains unattainable: it is an "utopian experiment" (Polanyi, 1957, p. 85), that alludes to an impossible, not to a desirable state. Since a fully self-regulated market is mere fiction, there "can be no analytically autonomous economy" (Block, 2001, p. 282).

In the proverbial real world, hence, economic practice is *always* (institutionally) embedded (Block, 2003). What is amenable to changes is the level of institutional embeddedness and the concrete manifestation of institutions that regulate society-economy relations (Barber, 1995; Beckert, 2003; Deutschmann, 2019, pp. 35–59). Markets, phrased differently, do not represent a generic, but a historically contingent form of socio-economic coordination (Cangiani, 2011; Peck, 2005). Markets, in fact, are "rationalistic constructs" (Polanyi, 1957, p. 258); they are "nothing natural" (Jessop, 2007, p. 45). Moreover, institutional embeddedness, contra canonical readings, is not an immutable and historically constant feature of the economy. Burawoy (2003, p. 255; 2014) in particular denounces the paucity of a "static sociology" that sequesters the socio-institutional realm to a solid "bed". Indeed, if the social "bed" is conceived in literal terms, there is a real risk, as Peck cautions, "that embeddedness becomes a conservative methodological apology for institutional inertia, social drag, and political complacency" (2013b, p. 1561).

Instead of a simplified static understanding of embeddedness, we rather seek to employ a more dialectical understanding of relational and restlessly contradictory transformations (see also Gemici, 2008; Krippner, 2001; Krippner & Alvarez, 2007). We also follow Callon's postulate that markets need to be "considered as the temporary outcome of confrontations of different programs, including scientific ones" (2007, p. 335), and turn to the key questions of our article: which specific forces have propelled the transformation towards industrial capitalism? And what is the role of these forces in the emergence of the platform economy?

## 4 Great Transformation I: The Breakthrough of Industrial Capitalism

A particularly puzzling facet of Polanyi's work is his propensity for mono-causal explanation and exaggerated argumentation.<sup>3</sup> At various instances, he places particular emphasis on a single driver of the emerging (self-regulated) market economy: "[T]he establishment of the market economy, and the nature of this institution cannot be fully grasped unless the impact of the machine (...) is realized" (Polanyi, 1957, p. 42: see also 1977, p. 6). On closer inspection, however, his writings also allude to the crucial role of science in legitimizing free markets and, of course, of the strategic and regulative agency of the state and interest groups (see also Gemici, 2008, p. 13).

### 4.1 Technology: The Steam Engine

For Polanyi, the industrial revolution, not the rise of capitalism, is the turning point of modern history. It is the great transformation towards the "machine age" in the long nineteenth century. Polanyi reiterates time and again that machinery is the driver of marketization, and not capital accumulation (1957, p. 12; p. 42; p. 75; p. 98): "Technology is in command, not capital", as Walker (2013, p. 1664) summarizes this key assumption. Polanyi, it seems, referred less to the affordances of novel technology, but took the "agency" of machines quite literally: "[T]he steam engine was clamouring for freedom and the machines were crying out for human hands" (Polanyi, 1957, p. 92).

Despite this rhetorical (and conceptual) exaggeration, Polanyi's line of reasoning on the role of machinery is instructive for understanding the interdependencies of the drivers of societal transformation. For Polanyi (1957), machinery cannot simply be reduced to technical affordances that boost productivity, but in fact changes societal relationships. While supply in the pre-machine age was negotiated through social networks and institutions like guilds, the machinery of industrialized production requires permanent and stable market-based supply:

The more complicated industrial production became, the more numerous were the elements of industry the supply of which had to be safeguarded. (...) In a commercial society their supply could be organized in one way only: by being made available for purchase. Hence, they would have to be organized for sale on the market — (...) as commodities (Polanyi, 1957, p. 78).

Polanyi's elaboration reveals that, on the one hand, the complexity of the machinery engenders novel risks associated with any interruption in a highly interdependent production process. On the other hand, Polanyi elucidates that the implementation of machinery has an even more fundamental further consequence: an all-embracing process of commodification (Block, 2003; Burawoy, 2007, pp. 360–363; Deutschmann, 2019, pp. 46–54): "Machine production in a commercial society involves, in effect, no less a transformation than that of the natural and human substance of society into commodities." (Polanyi, 1957, p. 44).

More precisely, the proliferation of machinery induced the commodification of three resources that have never been treated as commodities before. While production inputs are produced for sale (the definition proper of a commodity), labor, land and money exist for other reasons:

3. In fact, Polanyi seems to mock himself regarding this habit: "Such an explanation (...) must appear as all too simple. Nothing could seem more inept than reduce a civilization (...) to a hard-and-fast number of institutions" (1957, p. 4).

[T]he postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. (...) Labor is only another name for a human activity which goes with life itself, which in its turn is not produced for sale but for entirely different reasons, nor can that activity be detached from the rest of life, be stored or mobilized; land is only another name for nature, which is not produced by man; actual money, finally, is merely a token of purchasing power which, as a rule, is not produced at all (Polanyi, 1957, pp. 75–76).

In a Polanyian perspective, hence, economic value is not an expression of inherent attributes, but rather of a social relation (Jessop, 2007; Berndt, Werner, & Fernández, 2020b, p. 219).

#### 4.2 Science: Classical and Political Economy

*The Great Transformation* is not only a historical account of the “machine age” (Polanyi, 1957, p. 96) but, as Callon argues, “one of the rare attempts to link up economics and economy, with a convincing analysis of the role of economic theories (...) in the establishment of a (...) market” (1998, p. 2). Although science, admittedly, did not receive the same attention as machinery, Polanyi indicates that the role of the “new science of political economy” (Polanyi, 1957, p. 128) was not limited to describing the new reality of the “machine age” *ex-post*. Rather than simply revealing the laws of the market, political as well as classical economy were instrumental in framing the market economy. As Polanyi maintains, the “discovery of economics was an astounding revelation which hastened greatly the transformation of society and the establishment of a market system” (1957, p. 125).

Polanyi (1957) portrays the United Kingdom of the Eighteenth century as a restless society whose institutional and intellectual fundamentals lay in tatters. The onset of market dominance had gone hand in hand with a series of unprecedented consequences. Above all, the emergence of pauperism seemed incomprehensible to society, and scholars for a long time speculated on its origins, outdoing each other with crude explanations: poverty was traced back, for instance, to the habit of tea drinking, a new type of sheep or the domestication of dogs (Polanyi, 1957, p. 94). Only gradually, scholars began to establish a framework that allowed to explain the social dislocations of the time. Among these framings, the idea of labor market laws became particularly influential since they did not only provide explanations, but also practical advice:

Science, precisely because it became effective within the circumference of human affairs, meant in Eighteenth century England invariably a practical art based on empirical knowledge. (...) It fell to science to suggest how to regulate and organize the vast realm of the new phenomena (Polanyi, 1957, p. 125).

This intervention into social reality, according to Polanyi, took place on two levels. On the micro level, Adam Smith’s *Wealth of Nations* (1776/1999) has come to be seen as the intellectual foundation of rent-seeking behavior on markets. Although Smith himself advanced a rather multiplex understanding of human nature as morally and ethically conditioned (Hühn, 2019), his notion of an intrinsic “propensity truck, barter and exchange” has been canonized as the ultimate legitimization of the *homo economicus*. Polanyi (1957, pp. 116–117) emphatically rejected the idea that self-interest is inextricably woven into human nature as fundamentally flawed. Never, as Polanyi categorically states, “has a misreading of the past ever proved more prophetic of the future” (1957, p. 45). In his view, Smith’s ideas did not represent, but

rather shape social reality because a new set of ideas “entered our consciousness” (Polanyi, 1957, p. 87) and inspired new institutional arrangements proposed by economists. Rather than human nature, then, specific institutional arrangements compel actors to vigorously pursue their self-interest (Krippner & Alvarez, 2007, p. 230).

On a macro-level, the emergence of economics changed the self-perception of the society. Most notably, it was the work of Thomas R. Malthus and David Ricardo that ascribed to the new socioeconomic laws the universal validity of natural laws. For the first time, socio-economic forces and dynamics were identified as “laws” that did not derive from philosophical, political or religious ideas. The social was no longer “subject to the laws of the state, but, on the contrary, subjected the state to its own laws” (Polanyi, 1957, p. 116). Ricardo’s and Malthus’ “discovery of society” (Polanyi, 1957, p. 108) did not only implicitly proscribe any efforts to interfere. Ricardo and Malthus also separated society into two distinct spheres (see also Gemici, 2008, p. 13). While the laws of the (labor) market were formulated and generalized, the idea of the autonomous economic sphere was born:

For the self-regulating market was now believed to follow from the inexorable laws of Nature, and the unshackling of the market to be an ineluctable necessity. The creation of a labour market was an act of vivisection performed on the body of society by such as were steered to their task by an assurance which only science can provide (Polanyi, 1957, p. 132).

By “accounting for the production of *homo economicus*” (Krippner & Alvarez, 2007, p. 230), *The Great Transformation* seems to anticipate contemporary notions of performativity (Çalışkan & Callon, 2009). Polanyi indeed elucidates that “economic actors have to be constructed; they have to learn how to behave in market situations” (Block, 2003, p. 300). Economic theory, or science more generally, hence afford templates for social practice and societal self-perception triggering discontinuities in socio-economic coordination (see also Muellerleile, 2013, p. 1626).

### 4.3 The State: Liberal Governmentality

Even though Polanyi portrays the state as subjected to the “natural laws” of the market, it is not a passive entity. To the contrary, he argues that the spread of market-based coordination would not have been possible without the state: “Free markets could never have come into being merely by allowing things to take their course. (...) Laissez-faire itself was enforced by the state” (Polanyi, 1957, p. 145). The market accordingly is the “*deus ex machina* of state intervention” (Polanyi, 1957, p. 67), and markets and state are not necessarily opposed to, but complement each other: “For Polanyians, the notion that markets could exist outside of state action is simply inconceivable” (Krippner & Alvarez, 2007, p. 220). Only the regulative framework imposed by the state, as Polanyi argues, can warrant the transformation of resources into commodities and ascertain the continuous supply of the fictitious commodities of labor, land and capital (Block, 2001).

The state, however, is neither neutral nor the rational outcome of an implicit societal contract. Rather, the state affords an arena for various interest groups in their struggle to strategically entrench their interests in the institutional frame of society. Polanyi provides a list of historical exemplars of how different groups leveraged the regulative capacities of the state to secure their power — or their profits. Success of some groups and failures of others are one of the historic contingencies that allowed the “market revolution” to gain ground (Polanyi, 1957,



p. 41). Later, however, the state, at least in some countries, was mobilized by anti-liberal forces of the double movement (Polanyi, 1957, p. 147) as both profiteers and opponents of marketisation aimed for embedding their interests in regulation.

With reference to the English government of the seventeenth century, Polanyi (1957, p. 41) also makes clear that the state was anything but a mere reactive entity, but instead developed pro-active agency:

Their chancelleries (...) were anything but conservative in outlook; they represented the scientific spirit of the new statecraft, (...), adopting statistical methods and precise habits of reporting, flouting custom and tradition, opposing prescriptive rights, curtailing ecclesiastical prerogatives, ignoring Common Law. If innovation makes the revolutionary, they were the revolutionaries of the age.

From a Polanyian perspective, taken together, discontinuities in economy-society configurations and transformations of socio-economic coordination are not a quasi-natural process, but triggered by the interplay of technological affordances, performative effects of science and efforts to re-organize political and societal institutions. The next section first elaborates particularities of digital platforms before turning to the question: do the drivers that precipitated marketisation — technology, science, and state — also propel the proliferation of the platform economy?

## 5 Platforms: Infrastructures, Multi-Sided Markets or Ecosystems?

The answer to the question of the usefulness of the Polanyian trinity of technology, science and state is, of course, also determined by how digital platforms and the platform economy are conceptualized in the first place (Grabher & van Tuijl, 2020). In a similar manner as the notion of sharing, the term platform, of course, is normatively loaded (Gillespie, 2010). The ramified research into platforms, at the outset, had hardly more in common than an empirical interest in the novel affordances of digital infrastructures (Reuver, Sørensen, & Basole, 2018), but increasingly crystallized around three key notions (Grabher & van Tuijl, 2020, pp. 5–7).

From a socio-technical viewpoint, platforms afford an *infrastructure* that allows to design and deploy applications for computer hardware, operating and retrieval systems and the vast array of mobile digital devices (Helmond, 2015; Bogost & Montfort, 2009). Whereas the notion of infrastructure initially was largely confined to denote passive enablers of interactions between various types of users (for example, van Dijck, 2013), more recent accounts have foregrounded the power of these infrastructures to curate, select, and moderate the content that is exchanged in a largely elusive fashion (Gillespie, 2018). This infrastructural angle yields a particularly instructive heuristic since it foregrounds power relations and the contingent and relational nature of platforms (Plantin & Punathambekar, 2019, p. 166) as well as the indispensable, though typically invisible, role of maintenance for reliable performance (Leigh Star, 1999).

The shift towards a rather active understanding of platforms has gained further momentum with the construal of platforms as match-makers between previously fragmented and unconnected groups of users (Evans & Schmalensee, 2016). In the course of the pervasive digitalization of *multi-sided markets* (Rochet & Tirole, 2003 & 2006; Weyl, 2010; Hagiu & Wright, 2017), platforms have fundamentally transformed domains as diverse as the markets for goods (e.g., Amazon, eBay), mobility (e.g., Uber, Lyft), accommodation (e.g., Airbnb)

(Stabrowski, 2017; Crommelin, Troy, & Martin, 2018), labor (e.g. Upwork, TaskRabbit), funding (e.g. Kickstarter, Prosper) (Evans & Gawer, 2016; Langley & Leyshon, 2017b;) and, of course, the entire field of online socializing and content production (e.g. Facebook, YouTube) (van Dijck, van Poell, & de Waal, 2018; Fisher & Mehozay, 2019).

By placing the key emphasis on leveraging complementarity (Rietveld, Schilling, & Bellavitis, 2019), platforms have finally been perceived as *ecosystems* that encompass a group of interdependent actors that jointly develop a set of complementary assets (Gawer & Cusumano, 2014; Jacobides, Cennamo, & Gawer, 2018). A prime example is Apple's ecosystem in which Apple (the platform operator), software developers and individuals (platform users) jointly use and co-develop complementary software and hardware products (Teece, 2018). By leveraging complementarity, an increase in the demand for product A (e.g., smartphones) induces increased demand for product B (e.g., apps). Complementarity, then, holds the promise that a contribution to an ecosystem reaps greater value (and generates higher profits) than trading the same product outside the platform (Lan, Liu, & Dong, 2019).

In the blurred economic reality of diversified multi-platform companies, the role of platforms as infrastructure, multi-sided market and ecosystem as a matter of course interpenetrate each other (Butollo, 2019). Moreover, the three perspectives might accentuate different aspects of platforms, they nevertheless concur in challenging the corporate assertions of performing the role of a passive enabler who cannot be held responsible for the interactions of the transaction partners. Rather than neutral match-makers, platform operators in fact act as market-makers by deploying various business strategies (Kirchner & Schüßler, 2020). Instead of displaying market prices in a passive fashion, platform operators actively forge price regimes (Parker, van Alstyne, & Choudary, 2016). In order to get both sides of a platform on board at the same time, platform operators pursue cross-subsidizing strategies (Rochet & Tirole, 2003, p. 990) by charging a higher fee for one side (i.e. the "profit maker") while subsidizing participation on the other side (i.e. the "loss-leader"). Moreover, platform operators through both codified Terms-of-Use agreements as well as through black-boxed algorithmic governance (Cheney-Lippold, 2017) define and police quality standards and platform participation (van Dijck, van Poell, & de Waal, 2018; Schwarz, 2019). Through end-to-end algorithmic monitoring as well as pervasive rating systems, platforms, indeed, afford an "evaluative infrastructure" (Kornberger, Pflueger, & Mouritsen, 2017).

Synthesizing the current state of pertinent debates, we conceive platforms as programmable digital infrastructures controlled by platform operators who, as non-neutral intermediaries, curate the interactions of interdependent complementors and users (Grabher & van Tuijl, 2020, p. 6; see also van Dijck, van Poell, & de Waal, 2018; Gillespie, 2018; Plantin & Punathambekar, 2019). The proliferation of this mode of socio-economic governance engenders a platform economy whose emergence, of course, does not simply replicate previous great (and small) transformations. And yet, a Polanyian perspective is illuminating since its particular view on technology is a reminder to account for the wider societal consequences of technological breakthroughs. In Polanyi's reasoning (1957), machinery did not only boost the efficiency of production, but radically transformed society by triggering the "fictitious commodification" of labor, land and money. Applying a Polanyian framework to the platform economy, correspondingly, implies examining wider societal effects of the digital infrastructures of platforms. Likewise, scrutinizing the impact of science and the state, Polanyi's second and third drivers of societal change, is not a quest for superficial historical analogies. Instead, differences are instructive here. The specific way of how technology, science and the state shape the platform economy point to significant discontinuities in economy-society configurations, as the next

sections seeks to expound.

## 6 Great Transformation II? The Emergence of the Platform Economy

### 6.1 Technology: Digital Infrastructures

In a similar fashion as machines were at the center of Polanyi's reasoning, the affordances of digital technologies capture the attention of current research on the emerging platform economy (see, for example, Reuver, Sørensen, & Basole, 2018; Bucher & Helmond, 2018, pp. 4–10). Despite this seeming resemblance, a Polanyian perspective on the platform economy does not, of course, imply to simply substitute the steam engine with the digital infrastructure of cloud computing, big data and algorithms. Nor is such a perspective confined to an economic accounting of the operative effects of the, then and now, novel technologies: whereas the machinery of the early industrial capitalism dramatically increased production efficiencies, the digital infrastructures of the platform economy are praised for their transaction efficiencies (see, for example, Parker, van Alstyne, & Choudary, 2016, pp. 7–9).

Polanyi's angle on the machine is particularly instructive because it widens the view from the technical apparatus to the economic prerequisites and societal ramification of a new production regime. As the machinery of the Industrial Age entailed capital-intensity and technical interdependencies at unprecedented levels, continuity of production became imperative. Constant supply could only be safeguarded through the commodification of critical inputs, and labor in particular. We recall Polanyi's (1957, p. 92) theatrical portrayal of machines that "were crying out for human hands." The ramifications of the proliferation of the new digital infrastructures are no less far-reaching, albeit they "cry out" for another essential resource: data.

Data are the vital input for the algorithms that perform the match-making function of platforms of bringing complementors and users together (see, for example, Evans & Schmalensee, 2016). Data, indeed, have turned into indispensable training material for algorithms that increasingly operate as self-learning, pattern discovery engines (Fisher & Mehozay, 2019, p. 1184).<sup>4</sup> Moreover, data on relational positions, preferences and activity patterns are essential to ensure a reasonable balance between supply-side users (e.g., Uber drivers) and demand-side users (e.g., Uber passengers) at any given point in time. Through "algorithmic personalization" of prices (Lury & Day, 2019), for example, platforms can fine-tune incentives to contribute to platforms and thus to enhance the overall attractiveness of the platform for additional users on both, the supply- and demand-side (Rochet & Tirole, 2003, pp. 1017–1018; Hagiu & Rothman, 2016, p. 2). Emblematic platforms like Facebook or Google, for instance, are designed to convert the very fabric of all interactions into data which are captured and aggregated to be sold to marketing companies (Schwarz, 2019, p. 3).<sup>5</sup>

Data, then, correspond with Polanyi's (1957, p. 75) construal of "fictitious commodities": they are brought to the market, but are "not produced for sale." Utilizing Google maps or hitting the "like"-button on Facebook, as might be assumed quite safely, are not motivated by the intention to produce data, but rather to get directions and to signal approval respectively. The

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4. In the recent past, data were often likened to oil, insinuating that they are the fuel of the future. Despite its fundamental flaws (Couldry & Mejias, 2018, p. 5), this metaphor is apposite at least in one respect: like oil, data have to be "refined," i.e. cleansed, tagged and customized by data brokers who, as the "refineries," turn the raw material into a valuable asset (Crain, 2018).

5. In 2017, the income from selling data to marketing companies amounted to 98% of the revenues of Facebook and 86% of the revenues of Google (Schwarz, 2019, p. 3).

production and commodification of data, in fact, involves processes through which platforms interpenetrate society ever further in order to tap into ever deeper pools of informational raw material that can be commodified as data (Zuboff, 2019).

The pervasive practice of platforms to continuously appropriate data that are produced through the “quasi-labor” (Fuchs, 2017) of simply utilizing platforms has been likened to a “second enclosure movement” (Boyle, 2003): this time enclosure is not about the fencing-off of common land and turning it into private property (Polanyi, 1957), but rather entails the appropriation of personal data by platforms (Dobusch, 2019, p. 110). The commodification logic, however, does not stop at an appropriation of what already has been produced, but instead is aimed at forging conditions that ensure an unrelenting production of further data: life itself “needs to be configured so as to generate such a resource” (Couldry & Mejias, 2018, p. 338). This reconfiguration of social life is informed by powerful models of business and social behavior; it are these models to which we turn next.

## 6.2 Science: Network Effects, Network Principles

The “discovery of economics,” writes Polanyi, “was an astounding revelation which hastened greatly the transformation of society and the establishment of a market system” (1957, p. 125). Even if the current transformation of society and the emergence of the platform economy is “hastened” by multiple “discoveries,” one scientific notion stands out: networks. The promulgation of “networks as organizations” (Powell, 1990) and, in more general terms, the rise of the “network society” (Castells, 1996) have been diagnosed long before the advent of the current brand of platforms. And yet, the emerging platform economy is deeply entwined with a deepening and broadening of the engagement with networks, in particular from two disciplinary angles.

The *business economics* of network effects is not just an academic sub-genre, but in fact informs business practice. Network effects are extolled as the single most powerful escalating platform dynamics, and growing the network, at virtually any cost, is the chief maxim of the platform economy. “Greater scale,” in the parlance of the *Harvard Business Review*, “generates more value, which attracts more participants, which creates more value — another virtuous feedback loop that produces monopolies” (Van Alstyne, Parker, & Choudary, 2016, p. 6). Quite obviously, business studies of the platform economy are not concerned with unleashing competitive dynamics and ruling out state intervention as classical economics did during the great transformation. Instead, pertinent accounts celebrate the “virtuous circle” that creates “monopolies” and, of course, generates monopoly rents in a rather unapologetic fashion (see also Parker, van Alstyne, & Choudary, 2016; Rochet & Tirole, 2003). The “winner takes all”-logic of platforms (Parker, van Alstyne, & Choudary, 2016) is not regarded as a menace to competitive markets, but celebrated as the ultimate promise of the platform economy (Andersson, 2017; Just, 2018).

Network effects, of course, are not windfall profits, and platform operators do not wait passively from them to occur automatically. Rather, the *social science* of networks is being capitalized on (quite literally) as a rich resource of metaphors, concepts and rules that can be deployed in the tactics of platform operators. On a most general level, the notion of networks is widely employed to invoke a sense of connectedness and (non-commercial) sharing amongst the various users, even if those users “share” hardly more than the software application that governs their online interactions. Such tactics of “community-” and “share washing” (Crommelin, Troy, & Martin, 2018; see also Wittel, 2011) are evinced in the Terms-of-Use agreements that

frequently are farmed in the jargon of community and network guidelines (see, for example, Uber Technologies, 2019)<sup>6</sup>.

Beyond this rather superficial (and perspicuous) metaphorical allusion, social scientific conceptions of networks are, indeed, employed as general “models for organizing the social” (Mejias, 2010). Analogous to the conceptual apparatus of business economics, principles and rules of social network analysis do not only provide the conceptual tools to describe social reality, but also produce social realities in a performative fashion through three interrelated practices (Grabher & König, 2017). First, the diffuse and multiplex social world of interactions and associations is transformed into the crisp relational trope of ties and nodes. There is, of course, “nothing innocent about making the invisible visible” (Strathern, 2000), and the network trope achieves nothing less than a “socio-metric subjectivation of actors” (Cardon, 2020): ego is a node in a meshwork of ties.

Second, the design of big data analytics and algorithms that are aimed at ensuring a continuous production of data — as a byproduct of socializing “which goes with life itself” (Polanyi, 1957, p. 76) — is increasingly informed by key principles of network analysis. LinkedIn, the social media platform for professional socializing, for example, leverages network concepts like transitivity (Granovetter, 1973) and homophily (McPherson, Smith-Lovin, & Cook, 2001) to catalyze networking activities through affiliation engines that bring “people you may know” to your attention (Grabher & König, 2017, p. 126). This manifestation of “instrumentarian power” to modify and monetize social behavior (Zuboff, 2019, p. 139) is not an overt attack on society, enforced by strict orders and bans; it rather shapes behavior gently through “nudges” and offers the benign playfulness of “gamification” (Couldry & Mejias, 2018, p. 344). By mobilizing essential behavioral formulas of games, like competition, quantification and reward (Woodcock & Johnson, 2018, p. 543), gamification relentlessly entices the “sharing” of contents, appraisal or mere attention. The tactics of gamification are based on network models of social behavior that are deployed to incentivize the production of ever more relational data to further advance those very models of social behavior on which gamification is based (Cohen, 2020, ch. 3).

Third, key principles of network thinking have long ago been translated into advice for business practice as well as for everyday-life. The ubiquity of platforms like LinkedIn and Facebook has galvanized the emergence of a distinct genre of guidelines and prescriptions of how to manage and to “optimize” networks. This genre evolves in various media, ranging from academic publications (see, for example, Burt & Ronchi, 2007), over the “airport-literature” of “how-to”-guides to dedicated seminars and, of course, the inevitable TED-talk (for example, Burkus, 2018). In contrast to earlier attempts to evangelize rules of how to link up with “friends in higher places,” the recent wave of networking guidelines explicitly mobilizes the authority of (social) science (Grabher & König, 2017, p. 131). Just as the *homo economicus* was scientifically framed and legitimized, the networked ego of the platform economy has to be fabricated by enhancing overall network literacy.

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6. The “learned helplessness” imposed by the deliberately impenetrable legalistic lexicon of Terms-of-Use agreements have been likened to the legitimization strategies of Spanish conquistadores who demanded acceptance of the Spanish *Requerimiento* by a non-Spanish speaking local population (Couldry & Mejias, 2018). The privacy policies of the Google smart-home platform Nest, for example, consist of 5,242 words (*The Economist*, 2019).

### 6.3 State: Managerial Governmentality

The cardinal assertion that “[l]aissez-faire itself was enforced by the state” clarifies the Polanyian (1957, p. 145) understanding of institutional embeddedness: market dynamics cannot be conceived outside state action (Krippner & Alvarez, 2007, p. 220). During the take-off of industrial capitalism only the regulatory framework imposed by the state could warrant the transformation of resources into commodities and ascertain the continuous supply of the fictitious commodities of labor, land and capital (Block, 2001). The state was both actor and political arena in which various interest groups struggled over entrenching their interest into the regulatory framework of society (Polanyi, 1957, p. 41). Regulation, in a Polanyian perspective, is always embattled, and not a means to end battles.

In the emerging platform economy, the principal roles of the state as actor and as arena remain unchanged; the specific types of regulation, however, are transformed in a fundamental manner and hone in on the commodification of the key resource of the platform economy: data. The key arena of regulatory struggles, in fact, is the “unilateral incursion” (Zuboff, 2019, p. 139) of platforms into society for the purpose of pervasive data extraction and commodification. To preempt any allegations of lawlessness, legal entrepreneurship has engendered an entire genre of Terms-of-Use agreements (Schwarz, 2019). These “uncontracts” (Zuboff, 2019, pp. 220–221) invoke the notion of a public domain that underwrites legal privileges to take (purportedly) raw data, to subject them to processing, and to impose the individual understanding of legibility of each individual platform. Terms-of-Use agreements, hence, “are performative acts of consummation. Together with the technical protocols that structure interactions (...) they work to leverage ad hoc and contingent trade secrecy entitlements into de facto property arrangements” (Cohen, 2019, p. 242). These acts of legal entrepreneurship, then, are not attempts to sideline the law, but rather to catalyze shifts in legal relations of accountability and to create new zones of immunity by mobilizing altered understandings of legality (Cohen, 2020, ch. 3).

The ongoing regulatory struggles over “datafication” (van Dijck, 2013) also induce a more general transformation of “governmentality” (Rose, O’Malley, & Valverde, 2006). Governmentality during industrial capitalism was liberal, in a broad meaning of the term, with the inherent contradiction that is at the core of Polanyi’s (1957) prominent (if somewhat ambiguous) notion of the double movement. Although the economic rationality of free markets is regarded as the most virtuous and infallible source of social ordering (Smith, 1776/1999), it requires vigilant state stewardship to safe markets from self-destructing dynamics. Neoliberal governmentality seeks to resolve this inherent contradiction by employing market rules and practices in the framing of regulation while, at the same time, subjecting these rules and practices to managerial oversight (Gane, 2012; Kirchner & Schüssler, 2019, pp. 8–9).

The emerging “managerial governmentality” is “procedurally informal, mediated by networks of professional and technical expertise that define relevant standards, heavily reliant on privatization and automation strategies, and opaque to external observers” (Cohen, 2019, pp. 243–244). In their concrete interactions with the state (that often seems overwhelmed by the technical complexities of digital infrastructures), platform operators privilege self-regulation and self-certification over governmental oversight. “Content moderation at scale,” to allude to just one manifestation of managerial governmentality, relies on a combination of algorithmic governance, self-regulation and standardized performance reporting as means of demonstrating compliance (Gillespie, 2018, ch. 2).<sup>7</sup> One of the key regulatory achievements

7. Self-regulation typically combines horizontal surveillance (users are encouraged to report violations of the

of platform capitalism, as Cohen concludes, “is the degree to which it has taken on the mantle not of deregulation but of managerial reregulation to prevent different institutional configurations from emerging” (2019, p. 244). To which extent managerial governmentality in the pervasive process of datafication will elicit a Polanyian-type double movement beyond sporadic initiatives of civic hacking and data activism (Beraldo & Milan, 2019) is yet to be seen.

## 7 Polanyi and Platform Capitalism: Useful Perspective or Yet Another Misapprehension?

While our paper ends with critical reflections on neoliberal governmentality, it took off on a rather optimistic note. Soon after the financial crisis of 2008, the rather scriptural book title “What’s mine is yours” (Botsman & Rogers, 2010) had morphed into a key tenet of a mode of economic exchange that aimed at a revitalization of social connectivity through the collaborative utilization of idle resources: sharing (Belk, 2015). The prospects of a post-capitalist alternative to neoliberalism rooted in a new digital sharing economy, however, started to turn gloomy the more the business logic of platforms achieved its cardinal promise: disruption (see, for example, Parker, van Alstyne, & Choudary, 2016). Although the debates over sharing *vs* platform or, phrased differently, revitalized community *vs* network effects apparently start off from diametrically opposed positions, they foreground a fundamental discontinuity in the relations between the economic and the social.

To conceptually disentangle these debates, we turned to Karl Polanyi’s (1957) as a most authoritative “theorist of discontinuity” (Block & Somers, 2017, p. 380) particularly with regard to the relations between society and economy. With our recourse to Karl Polanyi’s *opus magnum* we do not suggest that *The Great Transformation* provides the script through which the current emergence of the platform economy can be deciphered in a straightforward fashion. Rather than forcing Polanyi’s historically grounded framework onto a novel reality, we seek to advance a particular Polanyian *perspective* (see, for example, Peck 2013a; 2013b; Jessop & Sum, 2019; Berndt, Rantisi, & Peck, 2020a) in which “[n]o economy-society configuration is permanent or neutral” (Rankin, 2013, p. 1654).

The breakthrough of industrial capitalism was bound to specific historic, social and technological conditions — and so is the emergence of platform economy (see, for example, Gillespie, 2018; van Dijck, van Poell, & de Waal, 2018). Viewed from a Polanyian angle, the current proliferation of the platform economy, rather than a quasi-natural process, unfolds in a “complex alchemy” (Krippner, 2001) of technical affordances, performative effects of science, and deliberate efforts to regulate and govern the economy. This article argued that the drivers that precipitated industrial capitalism, technology, science, and the state, also fuel the current emergence of the platform economy albeit, of course, in a different manner.

First, as much as the market economy was propelled by the steam engine, the proliferation of platforms is driven by the digital infrastructures of cloud computing, big data analytics and algorithms (Kenney & Zysman, 2016; Fisher & Mehozay, 2019); and whereas the steam engine implied a commodification of labor, land and capital, the digital infrastructures transform the relational quasi-labor of interacting (Fuchs, 2017) into (relational) data that then are fabricated into tradeable commodities (Cheney-Lippold, 2017; Zuboff, 2019).

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Terms-of-Use agreements) with vertical control through moderators who (as low-income and low-status subcontractors) perform “proletarian judicial labor” (Schwarz, 2019).

Second, while the “discovery of economics” (Polanyi, 1957, p. 125) was instrumental for the framing of markets and the legitimization of strict market non-interference (Gane, 2012), the current emergence of the platform economy is scientifically conceptualized and promulgated through network theories, in two different disciplinary manifestations. On the one hand, business economics extol network effects as the single most powerful escalating platform dynamics (Van Alstyne, Parker, & Choudary, 2016, p. 6). On the other hand, key principles of social network analysis are deployed to inform the design of algorithms to entice the continuous production of new relational data (Couldry & Mejias, 2018; Grabher & König, 2017).

Third, although the dual role of the state as actor and as arena for regulatory struggles among the various stake-holders, in principle, remains unchanged, the specific objects and types of regulation changed fundamentally. Industrial capitalism is associated with liberal governmentality (Cohen, 2020, ch. 3) that was focused on ensuring the continuous supply with the fictitious commodities of labor, capital and land. In the platform economy, in contrast, the commodification of (relational) data is the key regulatory concern (Schwarz, 2019; Zuboff, 2019). The evolving managerial governmentality seeks to meet this challenge by employing market rules and practices in the framing of regulation while, at the same time, subjecting these rules and practices to managerial oversight (Gillespie, 2018, ch. 2; Cohen, 2020, ch. 3).

Karl Polanyi, as theorist of discontinuity but also of economic heterogeneity, however, reminds us not to confine theorizing to the driving forces of the emergence of a *single* mode of coordination (Peck, 2013b, pp. 1555–1558). In this Polanyian spirit, we conclude with the suggestion to proceed with the analysis of the various institutional configurations and regulatory regimes of a platform economy “in the making”, how they might be combined with, or live alongside other governance modes, in various degrees of contradiction or complementarity (Mair & Reischauer, 2017; Butollo, 2019; Grabher & van Tuijl, 2020).

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**Gernot Grabher:** Research Unit Urban and Regional Economics, HafenCity University Hamburg (Germany)

📧 <https://orcid.org/0000-0002-2911-9254>

✉ gernot.grabher@hcu-hamburg.de; 🌐 <https://www.hcu-hamburg.de/master/stadtplanung/arbeitsgebiete-professuren/gernot-grabher/>

Gernot Grabher is Head of the Research Unit Urban and Regional Economics at the HafenCity University Hamburg. Roaming between the fields of economic sociology and economic geography, he currently works on the transformation of network into platform economies; the creative affordances of marginality; and the new experimentalism in urban governance. He bought his first copy of *The Great Transformation* in 1982.

**Jonas König:** Institute for Urban and Regional Planning, Technical University Berlin (Germany)

📧 <https://orcid.org/0000-0003-4173-7108>

🌐 [https://www.econ-isr.tu-berlin.de/menue/ueber\\_uns/wissenschaftliche\\_mitarbeiterinnen/dipl\\_wigeogr\\_jonas\\_koenig/](https://www.econ-isr.tu-berlin.de/menue/ueber_uns/wissenschaftliche_mitarbeiterinnen/dipl_wigeogr_jonas_koenig/)

Jonas König is a researcher in urban economics at the Institute for Urban and Regional Planning at the Technical University in Berlin. He was a guest lecturer at the Technical University in Istanbul as well as in the digital media program at Leuphana University Luneburg.