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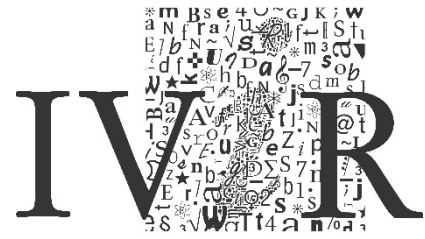
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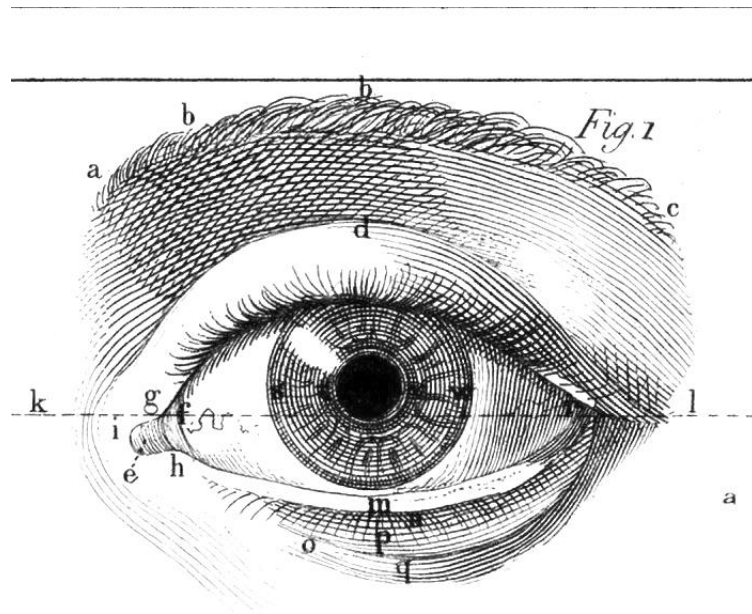
THE COMMODIFICATION OF TRUST

Balázs Bodó

Amsterdam Law School Legal Studies Research Paper No. 2021-22

Institute for Information Law Research Paper No. 2021-01

The commodification of trust



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"I have been writing in this chapter largely out of a sense of dissatisfaction: dissatisfaction with the languages I see available for my use (and with my own relation to them), with the forms of discourse I find myself using, with the conversations I engage in and observe, with the voices I hear myself and others using, with the texts and communities we make. This dissatisfaction is especially acute with specialized professional or academic discourses, but it is not confined to those. More generally it is with a bureaucratized culture, one that reduces human actors to very narrow roles, human speakers to very thin speech. For me the best response is what I have called integration and transformation, the attempt to put together parts of our culture, and corresponding parts of ourselves, in ways that will make new languages, voices, and forms of discourse possible. Part of this can take the form of "interdisciplinary work," but only of a certain kind; and the crossing of disciplinary boundaries is not essential to what I am talking about."¹

abstract

Fundamental, wide-ranging, and highly consequential transformations take place in interpersonal, and systemic trust relations due to the rapid adoption of complex, planetary-scale digital technological innovations. Trust is remediated by planetary scale techno-social systems, which leads to the privatization of trust production in society, and the ultimate commodification of trust itself.

Modern societies rely on communal, public and private logics of trust production. Communal logics produce trust by the group for the group, and are based on familiar, ethnic, religious or tribal relations, professional associations epistemic or value communities, groups with shared location or shared past. Public trust logics developed in the context of the modern state, and produce trust as a free public service. Abstract, institutionalized frameworks, institutions, such as the press, or public education, science, various arms of the bureaucratic state create familiarity, control, and insurance in social, political, and economic relations. Finally, private trust producers sell confidence as a product: lawyers, accountants, credit rating agencies, insurers, but also commercial brands offer trust for a fee.

With the emergence of the internet and digitization, a new class of private trust producers emerged. Online reputation management services, distributed ledgers, and AI-based predictive systems are widely adopted technological infrastructures, which are designed to facilitate trust-necessitating social, economic interactions by controlling the past, the present and the future, respectively. These systems enjoy immense economic success, and they are adopted en masse by individuals and institutional actors alike.

The emergence of the private, technical means of trust production paves the way towards the widescale commodification of trust, where trust is produced as a commercial activity, conducted by private parties, for economic gain, often far removed from the loci where trust-necessitating social interactions take place. The remediation and consequent privatization and commodification of trust production has a number of potentially adverse social effects: it may decontextualize trust relationships; it removes trust from the local social, cultural relational contexts; it changes the calculus of interpersonal trust relations. Maybe more importantly as more and more social and economic relations are conditional upon having access to, and good standing in private trust infrastructures, commodification turns trust into the question of continuous labor, or devastating exclusion. By invoking Karl Polanyi's work on fictitious commodities, I argue that the privatization, and commodification of trust may have a catastrophic impact on the most fundamental layers of the social fabric.

¹ JAMES BOYD WHITE, JUSTICE AS TRANSLATION: AN ESSAY IN CULTURAL AND LEGAL CRITICISM (Paperback ed ed. 1990).

Introduction

Digital technologies remediate trust. This simple sentence points to fundamental, wide-ranging, and highly consequential transformations which take place in interpersonal, and systemic trust relations due to the rapid adoption of complex, planetary-scale digital technological innovations. The remediation and technologization of trust lead to the privatization of trust production in society, and the ultimate commodification of trust itself. This chapter is about this commodification: what it means in practice, and what its individual and societal consequences may be.

This chapter presents the following argument: Modern societies rely on 3 distinct logics of trust production which exist independently, but in close interaction with each other: communal, public and private. Communal, reciprocal logics are based on familiar, ethnic, religious or tribal relations, professional associations epistemic or value communities, groups with shared location or shared past are the most reliable sources of familiarity, control, insurance.² Communal logics produce trust by the group for the group. Public trust logics developed in the context of the modern state. Abstract, institutionalized frameworks, institutions, such as the press, or public education, science, various arms of the bureaucratic state create familiarity, control, and insurance in social, political, and economic relations. Public trust is most often produced as a free public service. Finally, private trust producers sell confidence as a product: lawyers, accountants, credit rating agencies, insurers, but also commercial brands offer trust for a fee.

With the emergence of the internet and digitization, a new class of private trust producers emerged. Online reputation management services, distributed ledgers, and AI-based predictive systems are widely adopted technological infrastructures, which are designed to facilitate trust-necessitating social, economic interactions by controlling the past, the present and the future, respectively. These systems enjoy immense economic success, and they are adopted en masse by individuals and institutional actors alike.

At the moment, these novel trust infrastructures are far from being trustworthy. They are heavily automated, at the expense of human control and oversight. They are often not transparent, sometimes because transparency is an impossible expectation. Often, they are only lightly regulated, if at all. They are disembedded from local social political, cultural, economic milieus, networks, geographies. This puts them in a somewhat precarious and contested position. Yet, the promise, or lure of technical trust production is big enough to warrant the huge amounts of energy and expertise which go into making them more trustworthy: accountable, reliable, transparent, fair, etc. In the future these efforts may ultimately pay off. The moment when they do, will be the moment when the society has gained new, trustworthy technological infrastructures to produce trust, i.e.: new institutional frameworks to support trust-necessitating social, economic interactions.

Digitization remediates all kinds of social and institutional practices which are relevant to trust production. This remediation however is not a neutral process, where the new, technological trust logics blend in with, or seamlessly replace the existing institutional alternatives. On the contrary, the emergence of the technical means of trust production already caused large ripples in the social, political, economic organization of all other trust production logics. The most obvious danger is that private, technological

² AVNER GREIF, INSTITUTIONS AND THE PATH TO THE MODERN ECONOMY: LESSONS FROM MEDIEVAL TRADE (2006); A. Greif, *Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders*, 49 THE JOURNAL OF ECONOMIC HISTORY 857–882 (1989); Avner Greif, Paul Milgrom & Barry R. Weingast, *Coordination, Commitment, and Enforcement: The Case of the Merchant Guild*, 102 JOURNAL OF POLITICAL ECONOMY 745–776 (1994); 2 FERNAND BRAUDEL, CIVILIZATION AND CAPITALISM, 15TH-18TH CENTURY, VOL. II: THE WHEELS OF COMMERCE (1992).

logics replace, or crowd out the communal and public trust infrastructures, and that trust production turns into an commercial activity, conducted by private parties, for economic gain, often far removed from the loci where trust-necessitating social interactions take place.

As I argue in this chapter, the remediation and consequent privatization and commodification of trust production has a number of potentially adverse social effects: it may decontextualize trust relationships; it removes trust from the local social, cultural relational contexts; and it also changes the calculus of interpersonal trust relations. These effects, taken together, point to issue that the remediation of trust production is not simply a technical process, or another case of creative destruction in the trust economy, or another opportunity to realize efficiency gains and costs savings for the state, or for private parties. Due to the social function of trust, the privatization, and commodification of trust has a direct relationship with the most fundamental layers of the social fabric.

The chapter is organized according to the phases of remediation, privatization, and commodification of trust. The first section will shortly recap the technical mediatization of trust production, and the process of the remediation of trust. Then, I'll extensively document all the loci, where this remediation results in the privatization of the trust production infrastructures and practices in the social, political space, and by public institutions. Lastly, I spell out how this privatization results in the commodification of trust production which previously have not been subject to market transactions, or the economic considerations of private parties. In the conclusion I offer some considerations which may help individuals, communities and public institutions assess the costs and benefits of aiding such remediation.

trust - remediation – privatization – commodification

Trust is a set of mechanisms, logics, or strategies humans employ to cross the bridge of uncertainty in their social, economic relations, so they can live with, rely on, or cooperate with each other even if such co-existence, co-dependence and cooperation is riddled with risks, contingencies, and potential harm.

Sociological, philosophical theories tend to study trust in the abstract, as a binary concept that either is, or is not. Trust relationships are usually studied in isolation, defined by the characteristics of the trustor, the trustee, and the relationship between them.

In contrast to these approaches, this analysis focuses on the contextual, background conditions which define how trust relationships emerge and develop. Trust, as a course of action may be specific to each individual and trust relationship, but trust relies on a number of precursors, which may facilitate or hinder its emergence. The most important preconditions of trust are familiarity, control, insurance, and -maybe paradoxically- distrust. Familiarity refers to situational normalcy, shared background expectations, predictability, epistemic certainty.³ A sense of control may be provided by the ability to agree on clear rules (via, for example contracts), transparency, accountability, oversight and enforcement. Insurance means the ability to mitigate risks and reduce potential harms that trusting relationships naturally entail. Strategically managed distrust produces trust by introducing limits on one's power, checks and balances, monitoring and verification mechanisms.⁴

In life, there are multiple potential sources of familiarity, control, and insurance, and therefore, we can all chose from a number of different alternative trust facilitating frameworks when we need to trust. Individuals make more or less conscious choices between such alternatives, based on the riskiness of the transaction, their tolerance for such risk, the relative costs and benefits of each alternative, in terms of the need for social capital, transaction costs, access to and the ease of use of various alternatives, etc.

To illustrate this point, let's say we want to get a bicycle in Amsterdam, and we don't want to end up with a lemon. We can try to find a bike for sale among our trusted family and friends. We can go to the second-hand bike store on the corner from whom we have previously bought two other bikes. We can go to one of the guys who sell cheap and sturdy bikes of shady provenance on Waterlooplein. We may go online, and find one on one of the digital marketplaces, where we can check the seller's reputation. There are also countless Facebook groups where strangers buy and sell bikes. We can also go to craigslist, knowing that it is infested with scammers. When we have found a bike we like, we can decide to check if the bike has been reported stolen. We can shake hands with the seller, or write a contract. Of course, we may also just steal a bike, or simply buy a brand new one from the manufacturer with warranty. These alternative courses of action rely on different trust infrastructures: interpersonal familial trust relationships, repeated personal interactions, digital systems, the legal system, confidence in oneself, general faith in humanity, or the competition in the marketplace to produce reliable products, etc. These trust infrastructures constitute a marketplace of trust.⁵ Different trust infrastructures may exist independently, may compete with each other, but more often they are embedded in, and are relying on each other.

³ Lynne G. Zucker, *Production of Trust: Institutional Sources of Economic Structure, 1840 to 1920*, in RESEARCH IN ORGANIZATIONAL BEHAVIOR (L.L. Cummings & Barry Staw eds., 1985).

⁴ Piotr Sztompka, *Trust, Distrust and Two Paradoxes of Democracy*, 1 EUROPEAN JOURNAL OF SOCIAL THEORY 19–32 (1998).

⁵ See: Zucker, *supra* note 3. on page 18: "Once trust is disrupted is there no way to restore it? If not, it is an internal anomaly in economic theory: it is asserted that trust is the most efficient transaction mechanism, but

The different trust production logics on the marketplace of trust can be roughly assigned to three categories: communal, private, and public. These distinctions express the different ways trust production is governed, and how the costs and benefits of the trust production activities are distributed.

Communal trust infrastructures constitute the most ancient and most pervasive forms of trust production. Familiar, ethnic, religious or tribal relations, professional associations, epistemic or value communities, groups with shared location or shared past are the most reliable sources of familiarity, control, insurance through instruments such as myths, beliefs, formal and informal norms, codes of conduct, honor.⁶ Within such social relations trust production logics operate based on norms of reciprocity, and are expressed through more or less formalized practices. Communal trust infrastructures operate like closed, members-only clubs, where trust is produced by and for the members of the well-defined group: only the members bear the cost of trust production, and in most cases, they are the ones who are able to benefit. Such trust infrastructures are thus closed trust commons, governed directly or indirectly, horizontally or vertically by their members.

In contrast, **public trust infrastructures** produce trust as a public good. In modern societies we have long been depending on abstract, institutionalized frameworks, whose aim, in short, was to produce trust in a society of strangers who live within the boundaries of the modern state.⁷ Public institutions, such as public education, public service media; fair, transparent, accountable, disinterested public administration; the legislative, judicial, and law-enforcement bodies of the state, and their commitment to public values, such as rule of law, fundamental rights, and principles of good governance; as well as societal institutions, such as the press, or science create familiarity, control, and insurance in social, political, and economic relations. These institutions provide the indispensable prerequisites of trust relationships: epistemic certainty; legal clarity; safeguards and assurances of competence, benevolence, and integrity; instruments of control, risk management and uncertainty reduction. They are instrumental for trust-necessitating cooperation and coordination in social, economic relations. Because of the public good nature of the trust produced herein, these public trust infrastructures are, at least in theory, and by design are accessible for all.⁸ This accessibility, however, comes as the cost of potentially alienating impersonality, and the danger of uniformization, standardization, and an insensitivity to recognize and handle individual circumstances, differences. The financial costs of public trust infrastructures are carried by the taxpayer. Non-financial costs include the need for political participation, and the individual costs of participating, as an individual, in a standardized system.

Lastly, **private trust infrastructures** produce and offer trust as a commodity on the marketplace.⁹ The private, commercial logic of trust production is a highly specialized, and usually highly competitive

economies and firms do nothing to attempt to produce it. I argue that trust is a commodity, albeit a social one, that it is "manufactured" by individuals, firms and even entire industries, that it is a purchasable good, and that one type or source of trust can substitute for another under some conditions. As prices for some sources of trust increase, other sources will tend to be exploited."

⁶ GREIF, *supra* note 2; Greif, *supra* note 2; Greif, Milgrom, and Weingast, *supra* note 2; 2 BRAUDEL, *supra* note 2.

⁷ ANTHONY GIDDENS, *THE CONSEQUENCES OF MODERNITY* (1990).

⁸ In this context, institutionalized racism can be described as a public trust infrastructure which cannot be trusted, or isn't trustworthy for all members of society.

⁹ See Zucker, *supra* note 3 at 13.: "When trust producing mechanisms are both formal and institutionalized, trust becomes a saleable product. Some firms, bureaucracies, and individuals specialize in the production of trust, marketing trust to others. For example, stock markets act as trust producing mechanisms, because of listing requirements for firms, memberships for brokers, and so on. Individuals, firms, and even modern entities such as pension plans pay for a broker's service, rather than invest a large proportion of their assets directly in unlisted companies. In so doing, they are opting for a system that guarantees trust and avoiding inherently riskier choices that may, however, offer substantially better gains. Hence, the stock market successfully manufactures trust;

economic activity, which its main focus is on facilitating economic transactions. Private trust producers sell confidence as a product: lawyers, accountants, credit rating agencies, insurers, but also commercial brands offer trust for a fee. Other commercial trust producers, such as banks, are also key producers of trust in economy, even if that 'product' is not directly accessible, and exists only as a byproduct of their core activities. The bureaucratic organization of firms is also a form of private trust infrastructure designed to address the need for trust in principal-agent relationships which characterize every level of intra-firm relations. In the case of private trust producers, there is a clear separation of the owners/operators of trust infrastructures, and those who rely on it for trust. Trust is sold as a service to clients who pay for the reduction of complexity and some form of certainty or control, while the trust producer captures some of the value created in the trust-facilitated economic transactions.

The internet, and the digital technologies created a new class of trust producers. Online reputation management services, distributed ledgers, and AI-based predictive systems also offer familiarity, control, insurance by structuring social, economic interactions via their systems. As I'll explain later, though there are many communal technological trust producers, the dominant form of technological trust production is private.

In modern societies, these three forms of trust infrastructures form complex, interdependent constellations. For instance, the trustworthiness of lawyers is produced communally (by the bar), but the trust they sell on the marketplace follows a private logic. In the meanwhile, both these forms of trust production are embedded in the public trust infrastructures, such as the institutions of legal education, and the court system.

this trust is purchasable, and the evidence that it is marketable lies in the long term support of the New York Stock Exchange, among others.”

trust - remediation – privatization – commodification

The three trust production logics operate at different scales, and each can best bridge a specific range of social, economic, geographical, cultural, economic distances. If most of the social, economic relations take place in close, familial, tribal or peer groups, the communal, reciprocal trust production logics suffice.¹⁰ Where social, economic, cultural interactions stretch beyond what such communal practices can manage, more formal institutions emerge to facilitate social interactions which need trust to bootstrap.¹¹

The emergence of the abstract, impersonal institutionalized trust production frameworks coincides with the emergence of the modern state. The scale, degree of formalization, institutionalization, standardization, abstraction and bureaucratization of trust production mechanisms are closely correlated with the scale on which the trust-requiring social, economic interactions take place in modernity. The growth of the action radius of human social, economic, political agency (due to social, political, economic, and technological innovations) increased cultural heterogeneity, and brought different customs, epistemic and normative systems into close proximity of each other. There was a need for new shared frameworks, in which trust requiring social, political economic interaction could take, in which the newly emerging differences, conflicts could be negotiated, harmonized, resolved, and mitigated. The rise of the modern administrative state, with its new disciplinary institutions, standards of language, unit and measures, administrative bureaucratic units, taxes, and cadasters, money was both a response to, and a prerequisite of the growth in the scale of social and economic cooperation across larger cultural, social, economic distances.

The Westphalian order on the 17th century laid out the political, geographic, and institutional grid, in which the geographic boundaries of the body politic defined the limits of the similarity of all the (cultural socioeconomic, linguistic, etc) differences that was willing to contain, and create the institutional infrastructure (from the standard language, via the schools and the army, to the justice system) aimed at producing trust within that unit (and often distrust in those who belong to other units). Slowly, the institutional framework of the modern state became an autonomous trust production infrastructure on top of the more local, communal i.e.: fragmented, interpersonal, familiar, tribal logics.

As we have discussed in Chapter XXX, globalization and digitization mark the beginning of a third period, where co-existence, co-dependence, and cooperation happens across even larger social, cultural, linguistic, economic, political distances than what we have got used to in modernity. In 1972, the Apollo 17 mission sent home the blue marble image of the Earth. This image, and the first oil crisis, only a few months later, marked the symbolic beginning of current globalized era of increased international mobility of people, capital, goods, information and services; of the Internet, of global production chains, financial networks,

¹⁰ Lex mercatoria would constitute an intermediate logic between communal and public logics. This institution emerged to regulate European trade emerged around the tenth century as medieval trade networks reestablished themselves after the fall of the Roman empire. While lex mercatoria operated still as a trust framework by and for merchants, and in that sense it was still a predominantly communal trust infrastructure, it also operated across administrative boundaries, ethnic, religious networks, and in that sense have functions only later, public trust infrastructures were able to do. GREIF, *supra* note 2. analyzes documents related to the Maghrebi trading network, and finds that “a multilateral reputation mechanism governed agency relations; merchants conditioned future employment on past conduct, practiced community punishment, and ostracized agents who were considered cheaters until they compensated the injured party. [A]gents were ready to forgo current gains in order to sustain their good standing in the merchants’ group.”

¹¹ GIDDENS, *supra* note 7.

and multinational corporations; of both Hollywood and of world music, i.e. the everyday exposure to global cultural heterogeneity; the European Union, the world trade organization, and the rise of regional supranational coordination; and last but not least the countless humanitarian, economic, ecological crises that do not respect national boundaries. The blue marble image, and the soaring gas prices marked the moment in time when trust requiring social, economic interactions, and interdependencies grew beyond what nation-states, and their institutional trust production infrastructures could handle.

Intuition may suggest that trust-dependent interactions will not happen without trust providing frameworks already in place. In practice, trust producing frameworks often emerge in response to a lack of, and the corresponding demand for such frameworks. Trust-requiring social economic interactions abhor vacuum, and if there is no trust framework to rely on, trust-demanding parties create their own. Globalization created a space of co-existence, co-dependence, and co-operation with countless social, political, economic dimensions. In many of these dimensions there were few functioning supranational trust frameworks. In response, a number of supranational institutions started to play a more prominent role, from political institutions, such as the bilateral Moscow–Washington hotline during the cold war, the multilateral UN, or the regional European Coal and Steel Community, via economic structures, such as the World Trade Organization, and other international and regional trade agreements, to various international professional and standards bodies, such as the International Telecommunications Union (a UN body), global labor unions, the world medical association, and the likes.

The internet brought in new risks, democratized the potential for cooperation, and further increased the possible dimensions of co-existence. It thus created a need for new trust infrastructures, more accessible than those established for and by multinational corporations, international political and economic institutions, mobile global elites. And in this case (again) the answer to the machine was in the machine¹²: as soon as the masses of strangers started to rely on the technology to interact with each other, technological trust producing services appeared.

Unlike in the case of communal and public trust logics, most, if not all of the trust architectures on the internet are fundamentally technological in their nature, without a pronounced, stable institutional character. The reason for that is simple. The institutional forms of trust production are slow to emerge, and existing institutions can only change so fast to effectively incorporate new, technology-facilitated practices. The development of the European Union as a traditional, top-down political institution to facilitate supranational economic, social coordination measures change in decades. Technology-relevant regulation, such as on data protection, digital services, or AI are complex legal machineries, which take many years to pass through all stages of careful negotiations, implementation, interpretation, enforcement, judicial review. Bottom up, decentralized trust production approaches, as we have seen in the case on internet governance, struggle to institutionalize, and establish themselves as effective sources of trust. On the other hand, technology development, especially standards-, protocol-, and software development can happen at a much faster pace. Since trust has been the core concern of e-commerce since its inception, significant resources flowed into the development of technological modes of trust production, and by now these solutions¹³ ultimately underwrite most of the economic, as well as other forms of planetary scale transactions. Despite their rapid success, and apparent ubiquity, many of these

¹² This is a reference to CHARLES CLARK, JON BING & THOMAS DREIER, "THE ANSWER TO THE MACHINE IS IN THE MACHINE" AND OTHER COLLECTED WRITINGS (2005).

¹³ E-commerce applications started out with basic computer security solutions, such as secure authentication, encryption and payment systems. Later they developed non-security related trust solutions to handle dispute resolution, reputation management, etc.

techno-social trust infrastructures are only at the very beginning of institutionalization, i.e.: consolidation into stable, valued, systems of rules capable of structuring long-term social interactions.

That being said, there are three emerging logics of technological trust production, which seem to be ahead of others in terms of their degree of institutionalization. First, some technological trust production takes place through the remediation, or **control of our relationship to the past**, to provide some form of familiarity. Search engines and social media platforms preserve traces of past actions, statements, information, both first-hand and by third parties, which we then use to establish the identity, reputation, character of individuals and institutions alike. In a much more pointed manner, the reputation systems of the sharing economy and e-commerce platforms collect, aggregate, structure, and present information on past transactions in the form of reputation scores to directly facilitate trust necessitating interactions.¹⁴

A second group of technical systems try to produce trust (or confidence) through extending **control over the present**, i.e.: over the conditions of real time transactions. Digital Rights Management systems and other trusted computing architectures were the first major examples of producing trust through technical coercion and control. Blockchains, and other smart contract based technical systems also operate through the creation of restrictive and prescriptive technical environments in which one can be confident in the behavior, and performance of the other.

Lastly, predictive algorithms produce **trust by reducing future uncertainty**, creating predictability, and offering tools to manage risks. Based on digital surveillance based profiling, and sophisticated, often inexplicably complex machine learning models, predictive systems, such as recommender systems, automated decision-making systems, digital classifiers reduce the number of future alternatives into a more manageable, and hopefully more relevant set of limited choices. In that sense, they very literally operate on the same principle as trust, which also enables action through the reduction of complexity, and the fictitious (but nevertheless effective) elimination of future contingencies in order to sustain the illusion of a navigable, and manageable present.

These new, technological modes of trust production increase the number of available trust production logics on the marketplace for trust. They also remediate, and thus transform existing trust logics.

¹⁴ ALESSANDRO GANDINI, REPUTATION ECONOMY: UNDERSTANDING KNOWLEDGE WORK IN DIGITAL SOCIETY (2016).

Trust - remediation – privatization – commodification

It seems that different modes of social, economic organization have their corresponding, dominant mode of trust production. If pre-modern societies can be characterized by the reliance of communal forms of trust infrastructures, such as trading networks organized on ethnic or religious group membership; interpersonal forms of trust based on tribal, or familiar linkages; or guild-like professional associations, then modernity can be marked by the rapid rise of the impersonal, public trust infrastructures offered by the strong centralized modern state. Most recently, the rapid rise of planetary scale techno-social systems marks a shift towards the dominance of private, technological trust infrastructures.

The last historical moment when the societal infrastructures of trust production went through a major transformation coincides with the rise of the modern (nation) state. The centralization of political power has followed different paths in different nations, but produced very similar results, in terms of how trust is produced in social and economic relations. In some cases, it was the monarchy which needed to break local territorial, provincial or urban powers, idiosyncrasies, to counter the power of the aristocracy through the unification of measures, taxes, cadasters, language, money. In other cases, it was the interests of the bourgeoisie which dictated standardization and uniformization, because production (the division of labor), and trade requires uniformity, interchangeability and centralized political administration.¹⁵ In the 19th century US, it was the growth in immigration, coupled with the rapid transformation of the economy, which rendered the local structures of social and economic cooperation inadequate and obsolete.¹⁶

In that process, it is indifferent whether it is the monarchy, or the newly emerging capitalist class which initiates, and draws the most benefits from the centralization. Similarly, from the perspective of the outcomes, it makes little difference whether the centralized state becomes an instrument in the hands of the bourgeois class to implement its policies (as Marx has seen the US), or the state emerges as an actor with its own particular interests and policies (as was the case in continental Europe in the 19th century). From the perspective of trust infrastructures, centralization has similar effects: it creates a top-down, centrally organized, state produced, public, and often forcibly imposed alternative to the pre-existing communal forms, practices and infrastructures of trust production with the effect of sometimes replacing them altogether. Political centralization has produced nation states where the pre-existing, loosely connected networks of territories, with their own languages, customs, laws, governments, systems of taxation, standards and measures, identities get incorporated into a system with a single frontier, in which uniform laws, government systems, language structure social and economic relations.¹⁷ All the localities which got incorporated into the centralized state have to be transparent and penetrable not just vis-à-vis the state, but more importantly vis-à-vis each other. The local, communal forms of trust production, which are accessible, legible and valuable for those who are part of the local social, economic, ethnic, religious relations have to accommodate the public trust infrastructures, if they want to look beyond the boundaries of local relations. This means that the political centralization creates an irresistible competitor to the local, predominantly communal trust infrastructures. The task of facilitating national social and economic trust necessitating interactions becomes the problem and responsibility of the state. This implies the creation of

¹⁵ M TABAK, DIALECTICS OF HUMAN NATURE IN MARX'S PHILOSOPHY. (2012); JAMES R BENIGER, THE CONTROL REVOLUTION : TECHNOLOGICAL AND ECONOMIC ORIGINS OF THE INFORMATION SOCIETY (1986).

¹⁶ Zucker, *supra* note 3.

¹⁷ TABAK, *supra* note 15 at 144.

institutions which can provide public goods, public services, in the form of publicly accessible infrastructures, such as justice, education, public administration or security.

The nature of this public trust infrastructure is shaped by the fact that the state emerges as an independent power, which creates strong incentives for various societal groups, stakeholders to capture said power. The traditional Marxian analysis frames this issue as a conflict between the capitalist and worker classes, but it is also clear that the capitalist class is also sufficiently heterogeneous in its interests to warrant an internal competition between its subgroups. This competition for the autonomous powers of the state shapes the nature of publicly produced trust, as ideally it evolves in a manner that would prevent any single group to capture and monopolize the state and its trust producing powers. This requires the development of complex networks of institutional distrust¹⁸, which reflect both the distrust among different societal groups with radically divergent and competing interests, and the very real possibility that any of these groups may overtake any of the bodies of the state. The democratic system, the division of power, the complex system of checks and balances, the transparency, accountability mechanisms reflect the complex instrumentation which prevents the degradation of public trust infrastructures into serving particular private interests. The capture of state power by private interests is of course is a real danger, and in Chapter XXX offers an analysis of authoritarian political regimes where public trust infrastructures are operated as private trust producers. But at least in the Northern-European liberal democracies, modernity has developed a complex and effective approach to operate trustworthy public trust production infrastructures, which could serve as a reliable, ubiquitous background, within which a plethora of sub-national, local contexts could operate their communal and private trust production logics.¹⁹

If the 19th century was the rise of the centralized modern state, and the corresponding increase of public trust infrastructures at the expense of communal ones, then the 21st century is the era when we can witness the rapid rise of private trust infrastructures, potentially at the expense of public (and communal) ones.

What are the dynamics that drive new, technological trust producers to be predominantly private, rather than communal or public infrastructures? The answer to this question lies in the fact that the development of digital trust infrastructures is driven by the same forces that have shaped the history of the internet since its inception. This history may be described as a continuous struggle between communal, emancipatory, and commercial, exploitative forms of social and economic organization on and of technical infrastructures. The declaration of the independence of cyberspace²⁰ (web 1.0) quickly degenerated into

¹⁸ See: Sztompka, *supra* note 4 at 26. "[T]he democratic culture of trust is due precisely to the institutionalization of distrust in the architecture of democracy. Most of the principles constitutive of democratic order assume the institutionalization of distrust, which provides a kind of backup or insurance for those who would be ready to risk trust, a disincentive for those who would contemplate breaches of trust, as well as a corrective of the actual violations of trust, if they occur. In effect, the spontaneous, generalized culture of trust is likely to emerge. In brief: the greater the extent of institutionalized distrust, the more spontaneous trust becomes. I refer to this as the first paradox of democracy."

¹⁹ The US represents a curious case where there is an increasingly apparent conflict between how the state is aspired to function, and the practical, everyday injustices it creates and maintains for sizeable shares of the (predominantly non-white, non-male) population. This conflict has led to a growing distrust in the government which has further lowered an already low levels of trust in the US. This stands in stark contrast with Scandinavian, and north-west European countries, where governments enjoy stable high trust. For the most recent trust data see: OECD, GOVERNMENT AT A GLANCE 2019. (2019), <https://doi.org/10.1787/8ccf5c38-en> (last visited Apr 23, 2021).

²⁰ John Perry Barlow, *A Declaration of the Independence of Cyberspace*, EFF.ORG (1996), <https://projects.eff.org/~barlow/Declaration-Final.html>.

the dominance of early internet giants such as AOL and CompuServe. The web2.0 idea, with models like commons-based peer production, or Flee/libre open source software tried to re-introduce communal logics as an alternative to the centralization and commercialization of the web.²¹ But the web2.0 aspirations failed to fulfill their promise, and the glorified sharing economy slowly re-centralized and re-commercialized around online platforms. Most recently the web3.0 movement is trying to revive the old dream of autonomous, decentralized, communally organized technical infrastructures under the slightly awkward banner of re-decentralization²². Its hopes, that on decentralized technology infrastructures similarly non-hierarchical social, economic superstructures would flourish might be as fleeting as its predecessors. This latest wave has little to show other than exorbitantly priced cryptocurrencies, non-fungible token bubbles, not really decentralized infrastructures, and much confusion about what may come next.

The same dynamics have shaped the development of digital trust infrastructures. On the one hand, a few, high-profile examples suggest that it is possible to peer-produce trust in and by techno-social systems. The internet gave birth to a number of few strong, communally organized trust infrastructures: BBS', wikis, and the Wikipedia, free/libre and open source software communities, pirate networks, couchsurfing and other non-monetary sharing communities, the creative commons ecosystem, un-permissioned open decentralized ledgers. But the private techno-social trust infrastructures are equally successful, and often emerge in direct competition with their communal counterparts, centralizing, privatizing and commodifying the trust production process. Private platforms, proprietary software as a service, major content networks, Airbnb and Uber: there are a number of very fundamental reasons why private, or privatized alternatives are often winning over the communally organized trust production digital services.

Historically, digital commons have been organized as open access services. This approach was a product of both ideology and technical shortcomings. On the one hand, neither of the two main ideological traditions which left their imprints on the early digital cultures: left wing communalism, and right wing anarcho-libertarianism had a taste for strong central authorities policing the boundaries of a digital community. On the other hand, the lack of a strong identity layer on the internet made such policing very difficult, if not impossible, even where there has been some taste for it. As a result of this legacy, the boundaries of the digital commons have always been rather porous. This porousness, on the one hand, enabled anyone to enjoy the value the members of the commons have pooled, but on the other hand, made it very difficult to prevent the appropriation and exploitation of the pooled value by non-members.²³ Ostrom's work on managed commons has shown that traditional communities manage to avoid the tragedy of commons by setting up strict rules on who, and under what conditions can extract resources from the common resource pool. In the digital domain, such value extraction may have been initially seen as a harmless activity, since digital resources are infinitely copyable. In practice, however, the value produced by a commons logic can instantly be destroyed, if a private party can enter the social, and economic relations of the commons, and extract value without permission. The most straightforward way to disrupt the commons logic, is to set up a private technical system and organizational structure to pool the same resources as the commons. The private party thus starts to compete with the commons for the same, always limited resources: time, energy, money, expertise, computing power, physical resources. Since the private party can directly

²¹ YOCHAI BENKLER, *THE WEALTH OF NETWORKS : HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2006).

²² Tim Berners-Lee, *One Small Step for the Web...*, MEDIUM (2019), https://medium.com/@timberners_lee/one-small-step-for-the-web-87f92217d085 (last visited Nov 5, 2020); Redecentralize.org, *Redecentralize.org* (2020), <https://redecentralize.org/> (last visited Nov 17, 2020).

²³ See BALÁZS BODÓ, *Was the Open Knowledge Commons Idea a Curse in Disguise? – Towards Sovereign Institutions of Knowledge* (2019), <https://papers.ssrn.com/abstract=3502119> (last visited Sep 22, 2020). For a more detailed version of this argument.

redistribute a fraction of whatever value it captures to the resource owners, it presents members of the commons a tough dilemma: should they offer their resources to the commons, where they cannot directly capture the value and cannot prevent others to capture that value, or should they offer it to the private party who offers at least something tangible in return for participation. In many cases, it has become clear that the ideological commitment to the commons proved to be insufficient to trump the lure of financial incentives offered by private competitors. And even in the case of those communally organized projects, such as Wikipedia, which managed to consolidate their position, it is clear that their survival is not based on their ability to set the terms of value extraction, but on the goodwill of their sponsors, both individual and corporate, who otherwise are free to extract whatever value they are able to.²⁴

These are the main reasons why the new, technological infrastructures of trust production are overwhelmingly private, at least in the West. Though the history of the internet is unimaginable without huge initial public investments (such as DARPA funding), and a number of highly influential communal systems, such as linux, Wikipedia or blockchains, trust production repeatedly ends up as a private infrastructure. Communal trust infrastructures are systematically defenseless against private appropriation, while public digital trust infrastructures have never played a significant role.

In addition to being private, technological trust producers also monopolies, and of those of a particular nature. Private digital trust infrastructures tend to form monopolies, as they are prone to the same network effects as any other networked information technology. Without some form of government intervention, their natural tendency is to end up as digital monopolies or oligopolies. Their particular nature can be attributed to the fact that most trust production technologies originate in, and operate from the US. Since no technology is inseparable from those histories, networks, institutions, locations, ideologies in which they have been invented and brought to market, the dominant trust infrastructures reflect, and reproduce the social, economic, political, cultural, ideological conditions, in which they are developed, financed, regulated, marketed. If the US can be described as a society and economy with a strong emphasis on the private sector; distrust in, and resistance towards government power and regulation; strong belief in the self-regulating capacity of markets; the emphasis on the consumer as opposed to the citizen; weakly defined fundamental rights; and a hyper-competitive, ultra-individualistic, sometimes techno-, or anarcho-libertarian organization of society, then the US-based trust infrastructure providers are the products of this environment.

These forces, taken together led to the emergence of a particularly aggressive form of private trust monopoly, which shows few concerns for even those social, cultural, economic relations which gave birth to it in the first place, and even less for any other context it does business in.

²⁴ See Balázs Bodó, Helene von Schwichow & Naomi Appelman, *Money Talks? Report on the one-day symposium on the impact of corporate funding on information law research*, INSTITUTE FOR INFORMATION LAW RESEARCH PAPER (2020). On the impact of corporate sponsorship on public goods such as information policy research. Elsewhere corporate sponsorship of Important open access / public infrastructure projects, such as the Mozilla foundation, which produces the Firefox technology stack, or Wikimedia Foundation, which produces Wikipedia, has been creating serious sustainability issues.

Trust - remediation – privatization – commodification

Trust, in the context of private, monopolistic digital trust infrastructures is re-defined as a (fictitious) commodity.²⁵ As such, it marks a completely new form of trust production, where both the trust production infrastructures, and the trust that is being produced become completely disembodied from all those social, cultural, economic relations which produced trust before.

Karl Polanyi, in his “Great transformation” argued that the industrial revolution’s greatest impact on social relations was that it required that access to some resources, namely access to labor, natural resources and money is not governed by the customs, laws, institutions and practices of local social relations, but such access is subject to the autonomous, impersonal logic of supply and demand of the marketplace.²⁶

Economic relations are defined by a number of fundamental coordination problems: how to allocate resources; how to establish value; how to both maintain and moderate competition; and how to facilitate cooperation. As Polanyi and countless economic sociologists have argued, the answers given to these questions are defined by the particular social structures; cultures; cognitive and political processes they are embedded in.²⁷ Polanyi has also warned of the dire consequences of disembodiment the solution of economic coordination problems from the social relations. The industrial revolution turned labor and nature into an abstract resource, a fictitious commodity. It severed the rules on the production, reproduction, allocation, value definition, and use of human lives and nature from the complex set of social relations which governed them up to that point. The replacement of the customs, traditions, familiar relations of local communities with the impersonal forces of supply and demand gave rise of a whole class of individuals, whose abjection is defined by their lack of worth on the labor market; the rapid enclosure of commons; the ruthless extraction of natural resources; and the ultimate collapse of nature once it has lost all economic productive potential. Polanyi’s classic categorization of allocation mechanisms distinguishes between reciprocity (based on symmetrical relations), redistribution (based on a central authority collecting and redistributing goods), autarky (production for one’s own use) and markets.²⁸ The commodification of labor and nature disembodied the functions of allocation, care, redistribution from reciprocal social, political, cultural, practices and institutions, and replaced them with the abstract and impersonal calculus of the marketplace.

I would like to argue that the technological remediation, and the privatization of trust production is the precursor of a similar process. The trust production logics I discussed earlier correspond well with Polanyi’s typology. The communal and public forms of trust production can easily be linked with the reciprocal and redistributive allocation mechanisms of trust as a social capital, respectively. Trust production, in these two forms is submerged in, governed by, and inseparable from social relationships. On the other hand, the private technological forms of trust production disembodied the production and allocation of trust from the

²⁵ See Frad Block’s introduction to KARL POLANYI, *THE GREAT TRANSFORMATION: THE POLITICAL AND ECONOMIC ORIGINS OF OUR TIME* (1944): “For Polanyi the definition of a commodity is something that has been produced for sale on a market. By this definition land, labor, and money are fictitious commodities because they were not originally produced to be sold on a market.”

²⁶ *Id.*

²⁷ Sharon Zukin & Paul DiMaggio, *Introduction*, in *STRUCTURES OF CAPITAL: THE SOCIAL ORGANIZATION OF THE ECONOMY* (Sharon Zukin & Paul DiMaggio eds., 1990).

²⁸ POLANYI, *supra* note 25 at 4.

existing communal and public frameworks, and subject trust to the consideration of private trust producers and the logics of the trust markets they build.²⁹

Throughout history, trust has been asked, had to be earned, has been extended onto another via letters of recommendation, or lost, but rarely was it mass produced, in uniform and interchangeable units, for sale on the market. Globalization and digitization, however, created the technologies of, conditions for, and incentives to produce trust on the industrial scale.

As I noted before, there have always been markets for trust, where certain professions could produce and sell trust as a commodity. For example, one of the major trades of the legal profession is the production of trust, through the provision of legal certainty, contracts, arbitration or dispute resolution. Yet, this trust has always been artisanal: small scale, personalized, specific to a given situation. Though it is possible to standardize certain types of contracts, it is impossible to automatically deploy them in all those situations they are used. The first examples of mass-produced trust appeared as the control revolution³⁰ started to work its way through the industrial production process. The iron laws of efficiency, and the insatiable desire to control the production process from raw materials to consumption created a strong need for new forms of trust which could be deployed efficiently. Within the firm, Taylorism, and other forms of modern management techniques reduced the need to trust the individual worker (or the manager) through optimizing the work process, breaking down complex tasks into simple ones, and organizing them into the factory line. Somewhat later, trust as a commodity started to appear beyond the narrowly defined domain of production. The standardization of packaging, and especially the branding of goods are forms of mass-produced trust for consumers, which were invented to bridge the trust gap between products and consumers. Credit rating agencies, which also arose around the same time in the US, offer similarly standardized, mass produced, commodified forms of trust on the financial markets, to bridge the trust gap between lenders and borrowers (both consumers and businesses).

These private, commodified forms of trust emerged in parallel with public trust infrastructures serving often similar purposes. Various laws concerning consumer protection, product safety, misleading advertising, government oversight, and competition have been on the agenda in the US and in Europe from the beginning of the 20th century. The expansion of public trust infrastructures in these domains served a double purpose: to facilitate (rather than substitute or complement) the private forms of trust production, and to make sure that private trust infrastructures are trustworthy – something they apparently have failed to be by themselves before the regulations were put in place.

The history of private trust production logics is thus familiar with the commodification, and mass production of trust. Yet, the rise of planetary scale digital private trust infrastructures opened a new chapter in this history, by turning trust into a standalone, mass-produced uniform commodity, with a global marketplace.

The most characteristic feature of commodified trust is that it is able to transcend and operate in a wide variety of very different social, economic, political, cultural, geographic contexts. Commodified trust is independent from both the local communal, and the national public logics of trust, and form an

²⁹ Gandini makes this point in relation to fictitious commodification of reputation. In particular he points out that “The fictitious commodification of reputation occurs in two chief ways. First, it represents a “symbolic token” that is instrumental to the exchange of goods and services. Second, it is subject to forms of “enclosure” by digital platforms, as the “token” created within these contexts cannot be used or “spent” elsewhere other than where it gets created.” See: Alessandro Gandini, *Reputation: the fictitious commodity of the sharing economy?*, in *HANDBOOK OF THE SHARING ECONOMY* 375–385, 379 (Russell W. Belk, Giana M. Eckhardt, & Fleura Bardhi eds., 2019).

³⁰ BENIGER, *supra* note 15.

autonomous domain. This autonomy applies to all aspects of trust production: its raw materials, its infrastructures, and the nature of its end product.

Take, for example, the reputation-based logics of trust production, embodied by the multi-billion-dollar sharing platforms, such as AirBnB. As noted earlier, the sole product of AirBnB is the trustworthiness information of its users, and the trustworthiness of the transaction infrastructure it has built. The reputation scores, and the secure transaction space is so valuable that the company can charge around 20% or more on all bookings, and its market capitalization is above 100 billion USD at the time of writing. Despite being present in more than 220 countries and territories, and in more than hundred thousand cities³¹, the raw material for the trustworthiness information has nothing to do with any of these 100000 localities they are present in. The reputation and trustworthiness of their hosts and guests is based on the data collected and produced by their system: ratings, textual feedback, but also response times, cancellation data, location data, and any other information point the technology can have access to, legally, or in some cases, illegally³².

The trust product of AirBnB and similar services is a reputation score. This reputation represents someone's trustworthiness in a specific role in the context of a specific economic transaction: trustworthiness as a host, trustworthiness as a client of ride sharing services, trustworthiness as a buyer or seller on an e-commerce platform, trustworthiness as a potential hookup. Since these systems are global, the reputation they produce must be location agonistic, therefore supposedly culture, language, and society agonistic as well. Reputation as a fictitious commodity³³ is designed to be legible across all the different social, economic political, geographic, legal domains they are being sold: 100000 cities, and 220+ territories. The same way global brands standardize products, production processes, signs and trademarks, marketing and communication to be recognizable, intelligible in all the contexts they appear, and to convey very similar meanings in all these contexts³⁴, the commodification of operates with similar tools to achieve similar results.³⁵

The private technological trust production process collapses the richness of trust-relevant individual characteristics and social, economic interactions into simple data structures which can be processed at scale. The process of technological trust production disembeds trust from social relations, strips away the local, idiosyncratic characteristics of trustworthiness signals, and re-molds them according to the choices, preferences, interests of the private trust producer.

³¹ Based on their website on 4/22/2021. <https://news.airbnb.com/about-us/>

³² Uber, for example was accused of illegally blocking access to its services to users it suspected to work for its supervisory authorities. "Guessing" sensitive data, such as sexual orientation based on other data points, as some social network sites has been accused of doing, would also count as an illegal practice, at least under European GDPR rules.

³³ Gandini, *supra* note 29.

³⁴ ROSEMARY J COOMBE, *THE CULTURAL LIFE OF INTELLECTUAL PROPERTIES : AUTHORSHIP, APPROPRIATION, AND THE LAW* (1998).

³⁵ Local variations exist of course, but it is unclear when do private trust producers invest in resisting compliance with local regulations, social norms, and when they decide to adjust their operation to local requirements. Ultimately, it seems the decision tends to boil down to raw business interests: doing business in authoritarian regimes may require sacrificing some of the trustworthiness of the trust producers, but that still may be a price worth paying. This dilemma is a recurring one for tech forms who try to enter to the Chinese, or the Russian market, for example. Google, Yahoo, Twitter Oracle have all had to face serious backlash in the West, among their employees, their investors, and the public when access to these markets were conditioned on exposing their local users to potential political persecution, or interference with the services in general. See Chapter YYY on the impact of such decisions on the trustworthiness, especially the perceived integrity of private trust infrastructures.

What is lost in the process of disembedding are the cognitive, cultural characteristics, social structures, and political institutions which shape the nature of our everyday trust relationships.³⁶ But what kind of consequences does such a disembedding may entail?

In economic sociology, cognitive embeddedness points to the fact that the assumption of the neoclassical economics about the rational, self-interest-following homo economicus does not describe very well the economic behavior of real-life actors, whose rationality is bound by a number of cognitive factors. In the case of commodified trust, however, the logic is somewhat inverted. The cognitive embeddedness of trust means that the relationship to the other is framed through one's cognitive dispositions. The social, communal, and (inter)personal forms of trust rely heavily on a plethora of a/pre/rational factors, emotions, beliefs, attitudes, fears, biases and other filters through which one perceives the other and their environment. In the case of technologically remediated trust, however, the trust producer filters these subjective, individual trust-relevant signals, and collapses them into impersonal, standardized, "objective" measures. Faced with these standardized trust signals (such as a recommendation, or a reputation score) one might still have his or her idiosyncratic response to them, such as acceptance, distrust, verification, ignorance, yet, the object of this cognitive labor is the standardized trust signal, and not the unique other this trust signal represents. The commodification of trust denies the opportunity for the trustor to directly assess, through its own eyes, the trustworthiness of the trustee. The interpretation of trustworthiness signals is done by the trust producer, and the trustor can only observe, and interpret this artificial trust signal. If the trustor trusts the trust producer, then even this small extra scrutiny will likely to not take place. In fact, one of the biggest value proposals of private trust infrastructures that they offer to save their users this cognitive work of assessing the other's trustworthiness. It is not just that they have to invest less cognitive resources into such a labor, but that they can completely outsource it in exchange for a monetary payment.

Cultural embeddedness points to the fact that our social, economic choices reflect the shared values, beliefs, understandings, ideologies, taken for granted assumptions, heritage we as individuals feel we belong to. Trust towards other humans, or institutions cannot be anything but culturally embedded, and nothing illustrates this point better than the relationship between distrust and xenophobia, both individual and institutional. Value congruence between trusting parties is one of the prerequisites of trust, and being embedded in similar, or at least mutually commensurable cultural milieus is exactly that: a shared cultural frame of reference. Commodified trust doesn't just strip away markers of cultural identity, but renders them completely irrelevant. It is important to understand, that this is not the effect of technological remediation. Communal home-sharing platforms like couchsurfing, or home-exchange put a great emphasis on the discoverability of each other's cultural background, partly because they don't try to replace the trust formation process with commodified trust signals, and that the trust these communal systems produce is contingent upon the opportunities for cultural exchange, and mutual understanding. But the moment the same economic activity is channeled through private, commercial platforms, such forms of exchange become stripped away, irrelevant, or just impossible to conduct. Simply, there is no opportunity on the interface of the private trust infrastructures to provide in-depth information on one's immensely rich cultural background and identity, and there are no tools through which such cultural information could enter the trust formation process. The reasons for such a design are multiple. Cultural embeddedness may work as a lubricant if trusting parties are culturally close, but cultural differences become a serious hurdle if trust needs to emerge across hard cultural boundaries. Planetary scale trust producers, which operate across a myriad of cultures must be color-blind if they wish to avoid the fragmentation of the market of their trust products across cultural divides, identities. In 2020-2021, the

³⁶ Zukin and DiMaggio, *supra* note 27 at 15.

emerging debates on ‘de-platforming’ or ‘canceling’ certain voices, cultures from online platforms highlight this danger of fragmentation when culturally disembedded commodified trust producers fail to maintain their deliberate distance and isolation from communal forms of trust.

The structural and political (dis) embeddedness are probably the most evident characteristics of commodified trust. It was exactly the need for trust relationships beyond existing structures (both communal and public) which brought forward the need for planetary scale private technological trust infrastructures in the first place. In these freshly emerged domains of co-existence and collaboration, technological trust infrastructures may be the only (effective) structures in which trust can be embedded in, at least in the short term.

The more interesting development is when these new techno-social trust infrastructures operate in domains where structurally embedded trust logics are dominant. The emergence of commodified trust in the domain of dating, sex, love and marriage provides an interesting case study. Online dating services constitute of the major online trust tech infrastructures which enable people to trust strangers enough to let them into their home, bed, body, and soul. The appearance of these services has been linked to the rise of interracial, interreligious, or of different education status marriages.³⁷ It seems that commodified trust helped individuals to trust each other in ways traditional communal trust infrastructures couldn’t. But the rise of culturally, socially heterogenous couples is not the only way how trust producers in this domain rewrite the dating and mating logics structured by existing social relations. As multiple studies have pointed out, the use of online dating services may lead to personality disorders, and dysfunctional coping mechanisms, and may have systemic effect on the local dating scenes, due to problematic individual effects, and a shift in expectations towards casual, sex-oriented encounters at the expense of more ‘expensive’ long-term relationships.³⁸ In short, commodified trust both opens up new opportunities, but can also radically alter how existing communal trust infrastructures work.

The political disembeddedness of digital infrastructures is an issue that has long been the topic of heated discussions ever since Barlow’s declaration of the independent of cyberspace.³⁹ In this case the degree of disembeddedness is best measured by the degree to which these trust infrastructures are (not) regulated by local (municipal), national, and supranational (EU) rules. On the one hand, many recent regulatory proposals and digital society strategies seem to point out that the current private technological infrastructures are untrustworthy and so the regulation is necessary to increase trust in both the technical systems, and in society in general.⁴⁰ On the other hand, what is also clear that even in domains where

³⁷ Reuben J Thomas, *Online Exogamy Reconsidered: Estimating the Internet’s Effects on Racial, Educational, Religious, Political and Age Assortative Mating*, 98 SOCIAL FORCES 1257–1286 (2020); Josue Ortega & Philipp Hergovich, *The Strength of Absent Ties: Social Integration via Online Dating*, ARXIV:1709.10478 [PHYSICS, Q-FIN] (2018), <http://arxiv.org/abs/1709.10478> (last visited Apr 20, 2021).

³⁸ Gabriel Bonilla-Zorita, Mark D. Griffiths & Daria J. Kuss, *Online Dating and Problematic Use: A Systematic Review*, INT J MENT HEALTH ADDICTION (2020), <https://doi.org/10.1007/s11469-020-00318-9> (last visited Apr 20, 2021).

³⁹ Barlow, *supra* note 20.

⁴⁰ See for example: “This Regulation aims to improve the functioning of the internal market by creating the conditions for an ecosystem of trust regarding the placing on the market, putting into service and use of artificial intelligence in the Union” (Page 1 of the The European Parliament and the Council of the European Union’s proposed Regulation on a European approach for Artificial Intelligence) “The resolution on ‘Digital Services Act – Improving the functioning of the Single Market’ calls for an ambitious reform of the existing EU e-commerce legal framework [and] calls for measures which have consumer protection at their core, by including a detailed section on online marketplaces, and which ensure consumer trust in the digital economy, while respecting users’ fundamental rights.” (Page 1 of the European Commission’s proposal for a Single Market For Digital Services (Digital Services Act) and amending Directive 2000/31/EC). “[Rapid technological developments] require a strong

there are some rules, such as in the case of the European General Data Protection Regulation, the effective enforcement of these rules remains an issue. The current state of political embeddedness of private trust infrastructures can be described as one where rules are fragmented, patchy, or outright non-existent, which gives much leeway for trust producers to set their own rules independently, often in direct contradiction to the formal rules of the jurisdictions, or informal norms of the communities they operate in.⁴¹

Though the preceding analysis mostly concerned the reputation-based trust infrastructures, the commodification and disembedded nature of trust follow similar paths in case of the other technological trust production logics. The premise of blockchain based, present-oriented logic is that no actor in the network is trustworthy, i.e.: none of the pre-existing trust signals, communal and public trust infrastructures are regarded as accessible, trustworthy, or in fact relevant. This is in part due to the fact that these technologies grew out of anarcho-libertarian communities, which are antagonistic towards both state regulation, but also towards a vision of stable social, economic relations the concept of embeddedness implicitly assumes. The vision of blockchain based trust production systems vis-à-vis social relations is reflected in their design: strong anonymity, lack of reputation signals, porous boundaries, which make entry and exit frictionless, lack of coercive enforcement powers, rational self-interest based economic incentives to structure participation, no assumption of trustworthiness. Taken together, these characteristics spell out a radically disembedded form of economic, social co-existence and collaboration.

Trust production logics which are based on the reduction of future uncertainties disembed trust production in a yet another way. Machine learning and AI systems work by being trained on large amounts of data, and produce multidimensional statistical models which are rapidly becoming incomprehensibly complex for any individual to make sense of. Every step in this process has a strong disembedding potential. Data collection already strips away context, and transforms knowledge by the process of measurement, standardization and objectification. The aggregation of data into large training sets further blurs the contexts and removes data from the original social, economic, political, cultural relations which produced the underlying knowledge it is assumed to represent. Trained models represent a further layer of abstraction. The controversies around 'racist' and in other manner biased automated decision-making systems only highlight the issue at hand. The bias in such systems often remains latent, but even when it becomes manifest, it is very difficult to link the behavior of the model to the social relations, which produced certain training data, which then ultimately produced the biased behavior. AI systems may be racists, but it is a generalized, nebulous racism, largely unattributable to any particular and concrete social context. But if the biases of the future-oriented trust systems are unattributable due to their disembeddedness of the social relations, how could the trust they produced remain embedded?

In short, we are staring down a status quo, where private, monopolistic, radically disembedded techno-social systems mass-produce radically disembedded, commodified trust.

and more coherent data protection framework in the Union, backed by strong enforcement, given the importance of creating the trust that will allow the digital economy to develop across the internal market." (recital (7) of the 2016/679 Regulation on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation))

⁴¹ NICOLAS P. SUZOR, LAWLESS: THE SECRET RULES THAT GOVERN OUR DIGITAL LIVES (2019).

Conclusions

Trust is a key asset in achieving social cohesion, solidarity, order. This simple fact has directed attention to trust itself, and obscured somewhat the importance of the logics which enable, facilitate the emergence of, and which produce trust in the first place. Only the subsequent crises of our established communal, private and public trust production infrastructures, and the emergence of new technological ones highlighted the need to revisit the institutional arrangements we design, build and maintain to produce trust as a public good, or as a commodity in order to maintain co-existence and collaboration at scale. Our current trust crises not just highlight the strengths and vulnerabilities of different trust production approaches, but also make their interdependencies, and dynamics more visible.

The complete or even partial disembedding of the trust production logics, and the commodification of trust production have a number of potentially catastrophic consequences for both individuals and societies.

For the individual, the commodification of trust means that both the ability to construct and communicate trustworthiness signals, and the access to the signals of others is conditional on compliance with the terms and payment unilaterally set by the private trust producer. Non-payment, or any other form of non-compliance may result in the exclusion of the individual from not just the narrowly defined trust marketplace, but from a whole range of social, economic interactions which the private trust producer has access to.⁴² It remains to be seen if the siloed, private trust infrastructures, which are characteristic of the West will merge with each other and with the public trust infrastructures, as is the case in China⁴³, where the social credit system created a watertight technological control infrastructure organized around trustworthiness information. But even if this outcome seems unlikely, there are signs that reputation scores have the potential to escape the confines of those narrowly defined economic contexts in which they initially appeared.

For example, in March, 2021, Uber and Lyft, the two largest ride-sharing platforms announced that they would share driver-related safety incidents with each other through a third-party private background check company, HireRight. As a result they could screen, and block drivers with bad reputation, irrespective of

⁴² See Gandini, *supra* note 29 at 379. : Reputation “allows the access to (or the exclusion of) individuals from the “sharing” exchange. The possession of a reputation represents an entry ticket for individuals to access resources and be part of the market. Without ratings, and particularly without good ratings, one is effectively unable to engage in any exchange. [R]eputation does not merely represent an indicator of the trustworthiness of a user (or service provider). Reputation is also a symbolic representation of the intensity with which a user engages in “sharing” as a form of exchange. As a reputation score can only be constructed by regular and continuous activity, failure to maintain this intensity impedes the maintenance of a tokenizable reputation. As a consequence, this role of reputation as a symbolic token means that users who access a sharing economy platform with no reputation to spend (or with a reputation to construct) are subject to an inherent form of inequality.”

⁴³ Some already argue that western reputation infrastructures reproduce something very similar to the Chinese social credit system, only on a completely private and decentralized manner. See: Larry Cata Backer, *China’s Social Credit System: Data-Driven Governance for a ‘New Era’*, 118 CURRENT HISTORY 209–214 (2019); Mike Elgan, *Uh-oh: Silicon Valley is building a Chinese-style social credit system*, FAST COMPANY, 2019, <https://www.fastcompany.com/90394048/uh-oh-silicon-valley-is-building-a-chinese-style-social-credit-system> (last visited Sep 1, 2019); Fan Liang et al., *Constructing a Data-Driven Society: China’s Social Credit System as a State Surveillance Infrastructure*, 10 POLICY & INTERNET 415–453 (2018); Daithí Mac Síthigh & Mathias Siems, *The Chinese Social Credit System: A Model for Other Countries?*, 82 THE MODERN LAW REVIEW 1034–1071 (2019).

where the bad behavior took place.⁴⁴ This announcement highlights a number of worrisome issues: only the negative reputation is portable, but the positive scores remain siloed; the negative reputation sharing infrastructure is also private; and the individual cannot rely on any of the safeguards afforded to citizens by public (and often communal) logics, such as the rights to access, contest, correct, erase reputation information, or have a voice in the governance of the reputation infrastructure. Unless these issues are addressed, the private trust/reputation infrastructure which we see the first contours of, can act as the police, the prosecutor, the judge and the executor, without the chance of appeal. Without intervention, commodified trust can easily evolve into a privately operated disciplinary technology, both in the Foucauldian sense, where individuals must internalize standards of behavior, set by private actors, to maintain access to various trust infrastructures⁴⁵, and in a Deleuzian sense⁴⁶, where participation in the social, cultural, economic political exchanges within society of control are conditioned upon the having the seal of privately established trustworthiness.

The ability of private trust producers to exclude individuals from a growing domain of social interactions is not just detrimental for the excluded individual, but the community at large as well. For Polanyi the social order was precarious, and he pointed out the catastrophic effects of the commodification of relations in the core human, social and natural domains. The commodification of trust threatens with comparable damage.

Trust, in its communal, public, and traditionally (non-technologically) private forms in an extremely costly resource to produce. One study estimated that in 2010 more than a third of all employment in the United States served to uphold trust in economic relationships.⁴⁷ The share of the GDP spent of public services is also a relatively good proxy on the cost of public trust infrastructures. Maintaining communal trust infrastructures is equally resource intensive on the individual, in terms of the time, energy and expertise, which needs to be invested in maintaining one's own trustworthiness; which is required to correctly assess someone else's; and which is necessary to build trust in new interactions. The business proposal of private trust producers is that they can offer trust cheaper. They take off the cognitive load of assessing trustworthiness. They help individuals and communities to manage reputations scores. They volunteer to encode and automatically enforce rules with smart contracts. They rush to help us remove information overload, highlight important, and filter out irrelevant alternatives, as AI systems do. They can bridge all kinds of social, geographic, cultural distances. All for a fee, a percentage of the transaction value.

Yet, the choice between the different ways of paying for trust is not just a matter of transaction cost economics. The seemingly costly communal and public trust producing logics create more than just the narrowly defined trust. They create trust by having first created shared culture, language, community, they facilitate the emergence of trust through developing institutions and practices to negotiate and enforce rules, they create trust through structuring social, economic, cultural relations. When we buy trust as a commodity, none of the price we pay goes towards the production and maintenance of any of these shared infrastructures. On the contrary, there is a growing body of evidence on how private trust infrastructures accidentally or consciously destroy (in their parlance, disrupt) existing trust institutions. Sharing economy platforms replace often unionized workers with extensive social and labor rights with atomized subcontractors; or they turn culturally interesting urban neighborhoods into social wastelands, where

⁴⁴ Igor Bonifacic, *Uber and Lyft create a shared database of drivers banned for assault*, ENGADGET (2021), <https://www.engadget.com/uber-lyft-industry-sharing-safety-program-204433080.html> (last visited Apr 18, 2021).

⁴⁵ MICHEL FOUCAULT, *DISCIPLINE AND PUNISH: THE BIRTH OF THE PRISON* (1979).

⁴⁶ Gilles Deleuze, *Postscript on the Societies of Control*, 59 *OCTOBER* 3–7 (1992); MICHEL FOUCAULT, *SECURITY, TERRITORY, POPULATION: LECTURES AT THE COLLÈGE DE FRANCE 1977-78* (2009).

⁴⁷ Sinclair Davidson, Mikayla Novak & Jason Potts, *The Cost of Trust: A Pilot Study*, 1 *THE JBBA* 1–7 (2018).

residents are replaced by tourists. Social media platforms effectively replaced trusted news media when it came to the delivery of trustworthy information on the world. Blockchain platforms are popping up to disintermediate any and every social relation, disrupt and bypass the state, retire legal professionals or the banking industry. AI rushed to replace human judgement, care, consideration, discretion, and institutional competencies.

These developments should warn us, that overreliance on private trust infrastructures may have serious unintended (at best), or deliberate (at worst) side-effects, such as the separation of different, usually intertwined social, economic relations, and the subsequent weakening the social fabric.

The emergence of digital technologies as a quasi-autonomous domain further complicates and reinforces the existing institutional separation of society into loosely connected economic, political, and technological spheres⁴⁸, which in turn further facilitates the disembedding of trust from social relations, which in turn further reinforces the separation.

When one looks at the regulatory proposals which have online platforms, data practices, AI systems as their object, one sees that the questions these proposals try to address cut deep. How does the technological remediation, and commodification of social relations affect the ability of nation-states to organize social solidarity? How does the expansion of markets effect social inequality, local communities, the status, rights, freedoms, protections enjoyed by the individual in their status as citizen, as a consumer, as a human being? What are the communal and public institutions, and practices which we want to protect from the negative externalities of turning trust, data, identity, rules into fictitious commodities?

The push for new frameworks of tech regulation seems to reflect a new understanding that the state, that society needs to change course about how it relates to the commodification and private production of trust. Up until the second decade of 2000, the state created favorable conditions for technology to create fictitious commodities, and experiment with the market-based allocation of certain resources which were previously governed by social relations, political processes, public institutions. Privacy, trust, personal data, reputation, trustworthy information were among the resources which were allowed to be disembedded and commodified by newly emerging digital technologies. The challenge now is to change tracks and come up with ways to re-embed the circulation, allocation of these resources into the domain of the social and the political.

But this task is complicated by the fact that many of the public trust infrastructures are facing difficult times. Recent social, economic, political, or health crises has shaken the confidence in many governments, and as public trust infrastructures crumble, communal, tribal trust logics become more prominent. This may easily turn into a vicious circle, fragmenting the political order beyond recognition.⁴⁹ This breakdown of public trust infrastructures, and the tribalization and fragmentation of trust makes it doubly difficult address the challenges brought forward by the technological remediation, privatization and commodification of trust. Yet, it seems that the only solution is to reverse somehow this fragmentation process by strengthening the trust in, and trustworthiness of public trust infrastructures; making sure that we understand the role, value, function of those communal forms of trust production which are vulnerable to disruption; and regulating private trust producers so they are trustworthy.

⁴⁸ POLANYI, *supra* note 25.

⁴⁹See the foresight and assessment by the US intelligence council on this vicious circle of trust collapse at NATIONAL INTELLIGENCE COUNCIL, *Global trends 2040* (2021), https://www.dni.gov/files/ODNI/documents/assessments/GlobalTrends_2040.pdf.