



# **Classical Liberalism and the Problem of Technological Change**

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## Introduction

The relationship between classical liberalism and technology is surprisingly fraught. The common understanding is that technological advance is complementary to the principles of classical liberalism – especially in the case of contemporary, information-age technology.<sup>1</sup> This is most clearly on display in Silicon Valley, with its oft-professed libertarian (classical liberalism’s kissing cousin) affinities. The analytical predicate for this complementarity is that classical liberalism values liberty-enhancing private ordering, and technological advance both is generally facially liberty-enhancing and facilitates private ordering.

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<sup>1</sup> This chapter focuses on “contemporary technology.” That is, generally, those technologies associated with the information revolution of the past generation: computers, the Internet, and related information communications and processing technologies. A treatment of the relationship between classical liberalism and a more generalized concept of technology is beyond the scope of this chapter. It is, however, the authors’ view that the discussion offered here is relevant to such a broader conceptualization.

This analysis, however, is incomplete. Classical liberalism recognizes that certain rules are necessary in a well-functioning polity.<sup>2</sup> The classical liberal, for instance, recognizes the centrality of enforceable property rights, and the concomitant ability to seek recourse from a third party (the state) when those rights are compromised. Thus, contemporary technological advances may facilitate private transactions – but such transactions may not support private ordering if they also weaken either the property rights necessary to that ordering or the enforceability of those rights.

This chapter argues that technological advance can at times create (or, perhaps more accurately, highlight) a tension within principles of classical liberalism: It can simultaneously enhance liberty, while also undermining the legal rules and institutions necessary for the efficient and just private ordering of interactions in a liberal society. This is an important tension for classical liberals to understand – and one that needs to be, but too rarely is, acknowledged or struggled with. Related, the chapter also identifies and evaluates important fracture lines between prevalent branches of modern libertarianism: those that tend to embrace technological anarchism as maximally liberty-enhancing, on the one hand, and those that more cautiously protect the legal institutions (*for example*, property rights) upon which individual autonomy and private ordering are based, on the other.

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<sup>2</sup> See, *for example*, JOHN LOCKE, TWO TREATISES ON GOVERNMENT at §57 (“[T]he end of the law is, not to abolish or restrain, but to preserve and enlarge freedom. For ... where there is no law there is no freedom.”); FRIEDRICH A. HAYEK, LAW, LEGISLATION AND LIBERTY, VOLUME 1: RULES AND ORDER (1978) at 33 (“Liberalism ... restricts deliberate control of the overall order of society to the enforcement of such general rules as are necessary for the formation of a spontaneous order, the details of which we cannot foresee.”).

This chapter proceeds in four parts. Part I introduces our understanding of classical liberalism's core principles: an emphasis on individual liberty; the recognition of a limit to the exercise of liberty when it conflicts with the autonomy of others; and support for a minimal set of rules necessary to coordinate individuals' exercise of their liberty in autonomy-respecting ways through a system of private ordering. Part II then offers an initial discussion of the relationship between technology and legal institutions and argues that technology is important to classical liberalism insofar as it affects the legal institutions upon which private ordering is based. Part III explores how libertarian philosophies have embraced contemporary technology, focusing on "extreme" and "moderate" views – views that correspond roughly to liberty maximalism and autonomy protectionism. This discussion sets the stage for Part IV, which considers the tensions that technological change – especially the rapid change that characterizes much of recent history – creates within the classical liberal philosophy. The central insight is that classical liberalism posits a set of relatively stable legal institutions as the basis for liberty-enhancing private ordering – institutions that are generally developed through public, not private ordering – but that technology, including otherwise liberty-enhancing technology, can disrupt these institutions in ways that threaten both individual autonomy and the private ordering built upon extant institutions.

## ! What Is Classical Liberalism? A Technology-Relevant Account

It may seem unnecessary to provide a background understanding of classical liberalism in a single chapter in an entire book on the subject. But, although the general contours are consistent, there is no universally acknowledged statement of the principles that define classical liberalism and they vary enough from understanding to understanding that it is useful to define how the term is used here. Moreover, the discussion that follows addresses how technology affects what we think of as certain of the *defining* characteristics of classical liberalism. As such, it is particularly useful for us to place these characteristics on the table and explain their importance before considering how technology may affect them.

At the outset, it is worth clearly stating, as a matter of discursive convenience, that we classify classical liberalism and libertarianism as closely related but distinct philosophies, where libertarianism encompasses a more restrictive view on what is properly the purview of the state. This is not intended to be analytically rigorous nor a complete characterization of either. Rather, it is based in the recognition that many technologists, both in academia and in industry, style themselves as libertarian (or “cyberlibertarian”), and that there is a certain complementarity between some of these views and our understanding of classical liberalism. The views of self-styled libertarian technologists therefore present a useful frame through which to consider the broader features of the classical liberal understanding of technology.

Other contributions to this volume discuss the origins and principles of classical liberalism in more detail and with more sophistication than is required here. For our purposes, it is enough to explain classical liberalism as a political philosophy that values reliance on a minimal set of autonomy-respecting rules to facilitate voluntary, welfare-enhancing transactions between individuals.<sup>3</sup> By and large, these “autonomy-respecting rules” are property rights.<sup>4</sup>

Importantly, this sets up an inherent tension in classical liberalism. Property is not the same thing as liberty and, in fact, it is a *constraint* on liberty. The nineteenth century French anarchist, Pierre-Joseph Proudhon, famously declared that “[p]roperty is theft!”<sup>5</sup> and, in a sense, it is: By recognizing or by defining and assigning property rights (and by enforcing them), the government

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<sup>3</sup> Among many other sources for this general conception of classical liberalism, see, for example, Richard A. Epstein, *Let “The Fundamental Things Apply”: Necessary and Contingent Truths in Legal Scholarship*, 115 *HARVARD LAW REVIEW* 1300, 1302 (2002) (“[A] strong (but not absolute) *institutional* preference for consensual over forced exchanges; the legal system should find the former presumptively acceptable and the latter presumptively unacceptable. From this framework, we can mount a defense of private property and freedom of contract, subject to the usual provisos regarding the role of government in protecting individuals against the use of force and fraud, regulating monopoly, and providing public infrastructure.”).

<sup>4</sup> In the economic sense, as much as the legal sense, insofar as they establish not only a stable legal order for achieving distributive justice in Nozick’s sense, see, for example, ROBERT NOZICK, *ANARCHY, STATE AND UTOPIA* 149–52 (1974), but also enable an efficient economic order by reducing transaction costs, see, for example, Armen A. Alchian and Harold Demsetz, *The Property Right Paradigm*, 33 *JOURNAL OF ECONOMIC HISTORY* 16 (1973).

<sup>5</sup> PIERRE-JOSEPH PROUDHON, *WHAT IS PROPERTY? AN INQUIRY INTO THE PRINCIPLE OF RIGHT AND OF GOVERNMENT* (1840; Benjamin R. Tucker, trans., 1890), available at <http://bit.ly/2t0xPDC>.

removes something of value from the commons that was formerly accessible by anyone and transfers it to a particular person.

But just as importantly, the benefits of property are enjoyed by everyone. The system is decentralized such that *anyone* may, in principle, claim a property right over whatever she chooses provided she is the first to, say, possesses a piece of land, or otherwise assert her right as the result of voluntary exchange or by operation of law. Moreover, the incentives to invest, hire workers, produce things of value, and trade enabled by a system of property rights result in widespread social benefit. For classical liberals, the justification for the constraint on liberty entailed by property rights arises not from an appeal to natural order, but from the perceived social advantage it confers. As Richard Epstein has written:

[T]hese rights are defensible because they help advance human happiness in a wide range of circumstances, so that their creation under a set of general prospective rules satisfies the most exacting of social criterion. They tend to leave no one worse off than in a state of nature, and indeed tend to spread their net benefits broadly over the entire population—including both those who gain property rights under the standard rules of acquisition by first possession, and those who participate in the system only through the ownership of their own labor and their ability to enter into voluntary transactions with all individuals for the exchange of labor, property or both.<sup>6</sup>

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<sup>6</sup> Richard A. Epstein, *Why Libertarians Shouldn't Be (Too) Skeptical About Intellectual Property*, Progress & Freedom Foundation Progress on Point Paper

Such a system has at least two important characteristics.

First, because it is premised on respect for individual autonomy, including rules that provide for the protection and disposition of all individuals' property, classical liberalism is built upon what is commonly accepted to be a sound moral foundation.<sup>7</sup> Second, because such rules channel interactions between individuals into *voluntary* transactions, these transactions tend to be welfare enhancing. At the same time, because respect for autonomy necessitates that an individual cannot use or dispose of her property in a way that interferes with the rights of others, these transactions tend to enhance (or, at minimum, not detract from) *social* welfare, as well.

The mechanism by which these principles operate – and also their ultimate goal – is private ordering: “What really matters is that we develop a system of secure property rights that allows people to transact at low cost and high reliability.”<sup>8</sup> Rather than rely on an external, third-party, decision maker to attempt the efficient ordering of individuals' affairs, classical liberalism advances a system that recognizes the limits of knowledge and the risk of abuse of power inherent in that model. Instead, classical liberalism advances a system that depends upon individuals' localized knowledge and their own self-interest to

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No. 13.4, at 2 (Feb. 2006), *available at* [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=981779](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=981779).

<sup>7</sup> We observe that, at least in its basic design, a classical liberal order can satisfy the morality of a broad array of thinkers. For instance, on Rawls' account – someone not typically considered a classical liberal – “justice as fairness” requires something like Pareto-optimality in the distributions within a society. JOHN RAWLS, *A THEORY OF JUSTICE* 58 (1999).

<sup>8</sup> Richard A. Epstein, *The Property Rights Movement and Intellectual Property*, *REGULATION* 58, 63 (Winter 2008).



order their conduct. The key virtue of such a system is that it does not presuppose the existence of an external decision maker with sufficient knowledge, ability, and incentive to order the affairs of others. And, again, such a system has the virtue of being morally sound: Whereas a system that relies upon an external decision maker must empower that decision maker to use (potentially arbitrary) force to implement its social ordering in the face of intransigent parties, classical liberalism advances a system in which transactions are voluntarily achieved by virtue of mutually beneficial exchange.

In part because of its preference for private ordering, classical liberalism is often characterized as being opposed to government regulation and espousing extreme views of regulatory minimalism. But such characterizations are overly simplistic and fundamentally wrong. Classical liberalism properly understood both requires and respects strong legal institutions – particularly well-defined property rights – in order to facilitate and enforce the private ordering that is its *sine qua non*. Moreover, many classical liberals recognize that the system of private ordering espoused by classical liberalism necessarily advances only allocatively efficient transactions; it does not necessarily promote distributive efficiency, and such distributional adjustments of wealth by government may be necessary on the back end of the system.<sup>9</sup> And classical liberalism may even admit of the possibility of regulatory intervention through public law institutions where private legal institutions are insufficient or relatively inefficient.<sup>10</sup>

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<sup>9</sup> See, for example, Hayek's discussion of the potential need for some form of welfare programs in sufficiently wealthy societies. F. A. HAYEK, *THE ROAD TO SERFDOM* 133–35 (1994).

<sup>10</sup> See, for example, RICHARD EPSTEIN, *SIMPLE RULES FOR A COMPLEX WORLD* 280–81 (1995) (describing the shift from a civil legal regime toward a public

In contemporary discussions, the core principles of classical liberalism are not infrequently framed in terms of Coasean and welfare economics. These perspectives focus attention on allocative efficiency.<sup>11</sup> The predicates for classical liberalism, however, were established well before Marshall and Coase, and all of the foundational ideas are contained in contemporaries of the Scottish Enlightenment, most notably in the works of David Hume and Adam Smith.<sup>12</sup>

That said, both welfare economics and Coasean, transaction-cost economics are particularly useful for understanding the classical liberal perspective on technology.

Welfare economics offers a useful lens for understanding classical liberalism's concern with individual autonomy. An important concept in welfare economics is the distinction between Pareto-efficient transactions and Kaldor-Hicks-efficient transactions. A Pareto-improving transaction is one that makes at least one party better off without making any parties worse off. For instance, Orlando has an apple but prefers oranges; Alice has an orange but prefers apples. If Orlando and Alice exchange fruits, each is better off (and neither is worse off). In a transaction that is Kaldor-Hicks-efficient, however, parties may be made worse off provided that, on net, society is made better off. Thus, Orlando has no

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regulatory regime for the management of damages from small amounts of pollution affecting a large number of parties).

<sup>11</sup> See, for example, Armen A. Alchian and Harold Demsetz, *The Property Right Paradigm*, 33 JOURNAL OF ECONOMIC HISTORY 16, 21–22 (1973).

<sup>12</sup> See, for example, ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS (1776) (Edwin Cannan, ed., 1904), available at <http://oll.libertyfund.org/titles/smith-an-inquiry-into-the-nature-and-causes-of-the-wealth-of-nations-cannan-ed-in-2-vols>; David Hume, *On Government*, 5 (1777) (Liberty Fund, ed., 2013), available at [http://oll.s3.amazonaws.com/titles/2472/Hume\\_OnGovernment1777.pdf](http://oll.s3.amazonaws.com/titles/2472/Hume_OnGovernment1777.pdf).

fruit and Alice has an orange. Orlando likes oranges more than Alice does. If he simply steals Alice's orange he has gained more than Alice has lost. Under a Kaldor-Hicks standard (assuming no expenditures to prevent the theft), this is an efficient, socially-beneficial transaction.

The justification for Kaldor-Hicks-efficient transactions is that, in principle, Alice could be compensated for Orlando's theft. For instance, the government could tax Orlando in order to compensate Alice; or Alice could sue Orlando and recover compensatory damages. And, the theory goes, it is better to allow Orlando to put Alice's orange to socially-valuable uses than to risk losing out on the benefit of those uses because of Alice's intransigence or difficulties that Orlando may face (i.e., transaction costs) in bringing such a transaction to fruition.

From the classical liberal perspective, however, only Pareto-efficient transactions are presumptively legitimate. Such transactions are inherently beneficial to all parties (or, at least, beneficial to some parties and not harmful to any), and these benefits create incentives for parties to engage in these welfare-enhancing transactions. If they are truly welfare-enhancing, no coercion should be necessary for them to occur. If there are obstacles to these transactions occurring, classical liberalism holds that we should address those obstacles rather than adopt (Kaldor-Hicks-efficient) rules that would allow Orlando to violate Alice's autonomy. Doing so facilitates private ordering and protects individuals such as Alice from undue encroachment by either Orlando or the state. (As we will see, however, extreme cyberlibertarianism would readily countenance Kaldor-Hicks improvements).

The background concern for transaction costs implicitly runs through many, if not all, legal constructs that developed at common law. As Tom Merrill and Henry Smith have observed,<sup>13</sup> the goal of creating and using legal constructs is to manage the transaction costs (“information costs” in their account) inherent in a world of scarce resources. For instance, they describe the difference between applying an *in rem* regime and an *in personam* regime for managing property. The wisdom of applying one or the other in any given context comes down to their relative abilities to manage the information costs associated with settling disputes relating to ownership and use.<sup>14</sup>

Coase similarly offers a useful lens for understanding classical liberalism’s focus on the relationship between legal institutions and private ordering. For Coase, the concept of transaction costs is key to understanding the relationship

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<sup>13</sup> See, for example, Thomas Merrill and Henry Smith, *The Property/Contract Interface*, 101 COLUMBIA LAW REVIEW 773, 792–797 (2001).

<sup>14</sup> On Merrill and Smith’s account, *in rem* rights provide a way of minimizing the overall information costs associated with these disputes because the locus of ownership is fixed on the property itself. In the end, what matters in a particular dispute is which party gets the right to use a piece of property; but the way you arrive at that conclusion matters a good deal. If rights to use were always attached to individuals, the disputes would not just be between A (the putative owner of a piece of property) and B, but between A and all possible B’s, a situation that would exponentially grow the social costs associated with settling property disputes. By locating the attributes of ownership within the property itself, however, the costs are linear, as each B who would challenge a use examines her claims against a single record of entitlements attached to the property itself. The goal of establishing this order is to create an efficient system of private ordering that is more likely than not to promote Pareto-optimal transfers (in theory, if not in practice).

between individual actors' actions, legal institutions, and efficient outcomes.<sup>15</sup> Starting with a counterfactual world in which there are no transaction costs, he explains that legal institutions in such a world do not matter because individual actors will always engage in a series of transactions that result in all resources being put to their highest-value use. But, he goes on, because in the real world there are always transaction costs, well-designed legal institutions play a crucial role in ensuring optimal outcomes by reducing the transaction-cost impediments to efficient transfers. This perspective is very much in line with that of Scottish Enlightenment philosophers, who similarly ascribed great importance to legal institutions.

More to the point, Coase's focus on transaction costs precisely captures why the relationship between classical liberalism and technology is so fascinating and important. As we discuss in Part II, new technology is often developed and adopted precisely because of its effects on transaction costs. But any change in the incidence or level of transaction costs can significantly alter the optimal initial assignment of rights to maximize the likelihood of voluntary exchange. This means that technology may disrupt the structure of the legal institutions necessary to facilitate efficient, welfare-enhancing outcomes. At the same time, the distribution of these effects is often uneven, across both the specific transactions that will be entered into, as well as the individuals who will benefit. This may further exacerbate the effects of technological disruptions upon existing legal institutions, creating the possibility that a technological advance could both dramatically benefit some parties but dramatically disadvantage

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<sup>15</sup> See generally, Ronald H. Coase, *The Problem of Social Cost*, 3 JOURNAL OF LAW AND ECONOMICS 1 (1960).

others in indirect and unpredictable ways. Where this is the case, technology has the potential to undermine both the moral foundations and the welfare justifications for classical liberalism.

## **!! Why Technology Matters to Classical Liberalism**

Technology in its broadest sense is merely the means by which we do things; technological advance is a change in the way we do things that increases benefit and/or lowers cost. The waterwheel allowed us to use a constant linear force (the flow of water) to drive a rotational shaft that, in turn, could be used to drive a range of tools. It was a vast improvement over human- or animal-powered machines. The advent of the steam engine offered even more benefit by allowing us to drive the same rotational shaft almost anywhere, without the need for a source of running water. The advent of the internal combustion engine, in turn, provided yet another improvement, allowing us to drive a rotational shaft on a more reliable and efficient scale. In the same way, the Internet is a technological evolution of the telephone, which is an evolution of the telegraph, which is an evolution of postal carriers, which is an evolution of private couriers – all technologies that allow individuals to communicate with one another at a distance.

Technology, and especially technological advance, is important to the maintenance and advance of classical liberalism. Technology is a key input into liberty, effectively defining what individuals can do: that is, defining the practical

boundaries of an individual's liberty. And, as technological advance can expand the scope of these boundaries, it is often liberty-enhancing.

Such gains are realized in multiple ways. For instance, some technology enables new types of conduct. The transition from the waterwheel to the steam engine to the internal combustion engine dramatically expanded where individuals could live and increased their quality of life. Other technology affects how people are able to engage in conduct that they already enjoy, largely by reducing the costs associated with that conduct. Improvements in technology for writing and communications, for instance, reduce the costs of interacting (and transacting) with others: The costs of transactions in a world where communications are recorded on papyrus and transmitted by courier are dramatically different than those in a world where they are recorded as bits on a computer that are transmitted via wires.

As a result, as an initial matter, the classical liberal position entails a distinct skepticism of the development of new rules, or even the application of existing rules, to impede technological advance:

[T]here is a robust body of literature establishing the contributions of technological innovation to economic growth and social welfare ... [E]ven apparently small innovations can generate large consumer benefits. It is because of these dynamic and often largely unanticipated consequences of novel technological innovation that both the likelihood and social cost of erroneous interventions against innovation are increased.<sup>16</sup>

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<sup>16</sup> Geoffrey A. Manne and Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 JOURNAL OF COMPETITION LAW AND ECONOMICS 153, 168 (2010).

The story of technology is not necessarily all positive, however. Assessing the net effect of technological advance is particularly complicated by the possibility (or likelihood, even) that its effect on liberty, autonomy, and the institutional environment may simultaneously push in opposing directions.

For one thing, the benefits of technological advance or the problems that new technology can (or cannot) improve upon will inevitably fall unequally across members of society, thus altering, and often impeding, social, legal, commercial, or other relationships in unexpected ways. The advent of the waterwheel, for instance, endowed those near running water with benefits unavailable to others, and diverted economic resources away from activities that could not benefit from the operation of the waterwheel, all without respect to those activities' relative social value.

For another thing, technologies that benefit private parties and expand their liberties can also benefit government and expand its power (and constrict the populace's liberties). While the advent of the telephone, for example, certainly conferred enormous benefit and substantial liberty upon the populace, it also extended the reach of government and just as certainly facilitated to the rise of a more centralized and invasive state.<sup>17</sup>

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<sup>17</sup> See Henry G. Manne, *Reconciling Different Views about Constitutional Interpretation* in *THE CONSTITUTION, THE COURTS, AND THE QUEST FOR JUSTICE* 55, 60 (Robert A. Goldwin & William A. Schambra, eds. 1989) ("As a practical matter ... [e]ffective application of federal law [at the time of the Constitution's drafting] was severely constrained by the primitive technologies of transportation and communications ... But the rapid development of communication and transportation technology through the nineteenth and twentieth centuries made physically possible a degree of federal law enforceability inconceivable in 1787.").



Moreover, new technologies that increase the ease of or benefits from transactions between private parties (and thus expand opportunities for private ordering) may impose greater external costs upon third parties, either because the nature of the transactions may entail new externalities or simply because of the increase in the number of transactions that impose externalities.

These concerns are not unique to “technology,” although they may appear particularly acute in the context of technological advance. And this critique should not be read as anti-technology Luddism. To the contrary, “problematic” technological advance, where it occurs, often accompanies great social welfare gains from increased productivity and widespread dispersion of wealth. Moreover, such problematic technological advance frequently spurs beneficial advances in response. The classic example is Schumpeterian competition, in which firms leapfrog one another in a series of short-lived monopolies, each achieved through technological advance and maintained only so long as the then-monopolist can maintain its advantage. While this may bear the superficial hallmarks of monopoly, such dynamic competition in technology markets is actually perfectly consistent with strong competition and procompetitive outcomes.<sup>18</sup> Each successive “winning” firm must be committed to investing its profits in developing new and better technologies in order to try to preempt or co-opt the next technological wave and maintain its position. The benefits of this

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<sup>18</sup> See, for example, Thomas M. Jorde and David J. Teece, *Antitrust Policy and Innovation: Taking Account of Performance Competition and Competitor Cooperation*, 147 JOURNAL OF INSTITUTIONAL AND THEORETICAL ECONOMICS 118 (1991). Note also that “competition for the market” can be as constraining as within-market competition. See Harold Demsetz, *Industry Structure, Market Rivalry and Public Policy*, 16 JOURNAL OF LAW AND ECONOMICS 1 (1973).

“free-market innovation machine,” as William Baumol dubbed it,<sup>19</sup> redound not only to the firm, of course, but also to its customers and to society writ large.

Thus, further confounding any evaluation of the benefits of technological advance, such changes must be considered in a dynamic context. The mere fact that a new technology has some deleterious effects today does not necessarily justify corrective intervention through legal institutions; rather, today’s apparent technological costs may actually drive Schumpeterian competition, creating incentives for further technological advance to improve upon those effects.

The important insight here is that, as noted, classical liberalism is concerned with protecting and advancing both the liberty of the individual *as well as* the autonomy of other individuals and the ability of the institutional environment to facilitate private ordering. Technologies that are liberty-enhancing may nonetheless be concerning from the classical liberal perspective if they risk encroaching upon the autonomy of others or impeding welfare-enhancing transactions.

The effect of technological change on the institutional environment is particularly important and underappreciated. Changes that expand liberty for some people may also alter the relative incidence of transaction costs between contracting parties and thus alter or impair the (previously) efficient allocation of property rights. The institutional environment is not – nor should it be – static. Just as libertarianism is concerned with ensuring that laws and regulations not needlessly impair welfare- and liberty-enhancing technological progress, it

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<sup>19</sup> WILLIAM J. BAUMOL, *THE FREE-MARKET INNOVATION MACHINE: ANALYZING THE GROWTH MIRACLE OF CAPITALISM* (2003).

should be sensitive to the ways that technological advance may alter the desirability of *status quo* institutions.

Because of the reallocation of relative rights and powers inherent in technological change, even an effort to maintain the constancy of institutions – *not* to change them in response, in other words – results in a reordering. Perhaps most troublingly (and in a fashion seemingly woefully underappreciated by most classical liberals), this exogenous technological change even inherently alters the fundamental political ordering embodied in the Constitution:

In 1787, [] the idea that the federal government could effectively regulate matters relating, for example, to coal mine safety standards would have seemed absurd, not merely as a legal matter but, much more important, as a practical matter. It was not physically possible for the federal government to serve its writ widely enough to allow it effective authority over every detail of all commercial matters ...

Then ... enormous systems of roads, telephones, radio, television, airplanes, and computers appeared ... As a result a gross alteration of the federal government's physical power to regulate commerce had occurred. Yet when the courts looked to the words of the document and to the "original intent ...," [t]he legal concept of interstate commerce grew *pari passu* with the federal government's ability to administer laws locally. While the words did not change, the Supreme Court allowed the constant expansion

of federal regulatory powers in keeping with the changes in markets and market structure occasioned by the new technology ...

*What had actually happened to change our constitutional reality in this drastic fashion? Had there been an amendment or a revolution? No, there had been only the invention or introduction of new technologies by nonelected scientists and entrepreneurs ... In other words, the accidents of technological development determine the real limits on the restraining influence of the Constitution.<sup>20</sup>*

At the same time, classical liberalism must deal with the effect of technology on the perceived distribution of rights and rents through political institutions and the effort to change them accordingly. At minimum, to the extent that technological change alters the social distribution of liberty and autonomy under existing institutions, classical liberals must grapple with the reality that the backlash against such changes may result in demand for – and political acquiescence to – subsequent institutional changes to restore the previous distribution of rights across society in ways that, even net of the gains from technology itself, are socially harmful.

In other words, although technological advance can (and usually does) increase overall social welfare in broad strokes, the political response to the redistribution of rights, power, and rents it may entail can lead to a net reduction in welfare – including through reductions in private ordering.

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<sup>20</sup> Manne, *Reconciling Different Views about Constitutional Interpretation*, *supra* note 17, at 66–67 (emphasis added).

This problem is particularly acute in the case of implementations of technological innovation where the narrow redistribution of rents may be immediately apparent, but the broad, social benefits of new technology or new business models adapted to it may not be understood for some time. Importantly for a consequentialist approach like that of classical liberalism, this effect may be abetted by non-political actors including economists and legal scholars who tend to underappreciate the limits of their knowledge about novel technology and novel business arrangements.<sup>21</sup>

Consider an important and contentious contemporary example: privacy. Prior to the modern era in which a great number of social interactions are carried out online, it was relatively easy for individuals to keep information about themselves private and difficult for third parties (including the government) to observe and record that information. Today, by contrast, it is comparatively difficult for individuals to keep such information private and easy for third parties to observe and record that information. Despite changes in the value people attach to privacy that inevitably accompanied that evolution, changed technology may have shifted not only the efficient delineation of privacy rights (from a regime in which individuals were assumed to have waived control of information absent efforts to retain it to one in which they are instead assumed to retain control absent voluntary waiver of that control), but also the

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<sup>21</sup> See, for example, Ronald Coase, *Industrial Organization: A Proposal for Research*, in POLICY ISSUES AND RESEARCH OPPORTUNITIES IN INDUSTRIAL ORGANIZATION 59, 67 (Victor R. Fuchs ed., 1972) (“[I]f an economist finds something – a business practice of one sort or another – that he does not understand, he looks for a monopoly explanation. And as in this field we are very ignorant, the number of ununderstandable practices tends to be very large, and the reliance on a monopoly explanation, frequent.”).

*perception* of the appropriateness of the resulting allocation of rights (such that a “correction” was required to shift from a presumption of waiver to a presumption of prohibition absent affirmative waiver).

Indeed, the modern American political discourse on privacy and its legal and regulatory treatment has its origins in Samuel Warren and Louis Brandeis’s seminal 1890 article, *The Right to Privacy*,<sup>22</sup> which was written in significant part in response to the advent of a disruptive new technology: the portable box camera (the Kodak camera), introduced in 1888. It is worth quoting Warren and Brandeis at length, not only because the article addresses so directly the problem of adapting existing institutions to technological change, but also because it is an important progenitor of one branch of the contemporary cyberlibertarian approach to technology and institutions that, perhaps excessively, elevates liberty over private ordering:

That the individual shall have full protection in person and in property is a principle as old as the common law; but it has been found necessary from time to time to define anew the exact nature and extent of such protection. Political, social, and economic changes entail the recognition of new rights, and the common law, in its eternal youth, grows to meet the new demands of society.

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Recent inventions and business methods call attention to the next step which must be taken for the protection of the person... Instantaneous photographs and newspaper enterprise

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<sup>22</sup> Samuel D. Warren and Louis D. Brandeis, *The Right to Privacy*, 4 HARVARD LAW REVIEW 193 (1890).

have invaded the sacred precincts of private and domestic life; and numerous mechanical devices threaten to make good the prediction that "what is whispered in the closet shall be proclaimed from the house-tops ..." [T]he question whether our law will recognize and protect the right to privacy in this and in other respects must soon come before our courts for consideration.

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It should be stated that, in some instances where protection has been afforded against wrongful publication, the jurisdiction has been asserted, not on the ground of property, or at least not wholly on that ground, but upon the ground of an alleged breach of an implied contract or of a trust or confidence.

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But the court can hardly stop there. The narrower doctrine may have satisfied the demands of society at a time when the abuse to be guarded against could rarely have arisen without violating a contract or a special confidence; but now that modern devices afford abundant opportunities for the perpetration of such wrongs without any participation by the injured party, the protection granted by the law must be placed upon a broader foundation ... [S]ince the latest advances in photographic art have rendered it possible to take pictures surreptitiously, the doctrines

of contract and of trust are inadequate to support the required protection, and the law of tort must be resorted to.<sup>23</sup>

Regularly changing delineations of legal entitlements that may occur during periods of rapid technological change are potentially problematic for the very concept of property, reducing the durability of property rights, injecting uncertainty into the contours of ownership, and ultimately limiting the viability of private ordering. Indeed, even if these changed delineations improve overall efficiency in the allocation of entitlements, the mere fact of the change imposes transaction costs that can, in principle at least, be substantial. This is particularly the case where change is frequent, such that systems built upon long-term expectations of property delineations are kept constantly out of equilibrium.

Scholars have long recognized that legal institutions are shaped by technology and that changing technology may change those institutions. For instance, Roman citizens enjoyed a very different concept of “freedom of contract” than we do today; they were free to enter into any of a finite number of pre-defined contracts, but they were not free to draft contracts with their own bespoke terms. Today, largely any terms that can be rendered into recorded prose can be made contractually binding. The driving differences between these paradigms are the cost and availability of underlying technology: at Roman law, literacy was limited and it was costly and difficult to record terms; today literacy is assumed and recordation is widespread.

Similarly, at early English common law, courts recognized a finite number of forms of legal claims (*trover, covenant, assumpsit, detinue, trespass, and*

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<sup>23</sup> *Id.* at 193–211.



*replevin*). These forms were recognized to standardize legal process: The costs of recording and transmitting precedent were high, so courts channeled precedent into standardized forms to reduce the burden upon jurists and counsellors to facilitate the development and uniformity of the law.

But this came at a cost. Courts would often find claims that could not be fit into one of the standard forms nonjusticiable. But as technology improved and the costs of recording and transmitting precedent decreased, common law courts developed a generalized form of action, *trespass on the case*, which plaintiffs could argue in cases where their claims did not fit into a standard form. Over time, this generalized form largely displaced historic practice, to the point that the historic writs have been abolished in favor of generalized rules of civil procedure.

The same trend has also been seen in the case of the transition from *in rem* to *in personam* rights. Over time the law has increased the closed number (*numerus clausus*) of forms of *in rem* property that it recognizes, including allowing for an increased range of property-like transactions to be recorded through *in personam* contractual relationships. As with the expansions in the forms of contract and forms of action recognized by the law, the expansion in the forms of property has been driven by advances in technology that reduce the relevant transaction costs and consequentially alter the efficient structure of legal institutions.

These examples demonstrate the ever-evolving relationship between technology and legal institutions. But they are also examples that have not proven problematic for classical liberalism because the rate of technological

advance has been slow enough that legal institutions have been able to evolve apace.

But this alignment between the rate of technological and institutional change is not always present – as in the current technological setting (and perhaps that of most future technological changes, given their seemingly inexorable rate of increase). The ICT revolution has seen the transition from mechanical printing presses and analog telephones to palm-sized supercomputers and the Internet over the course of a lifetime, and from individuals who grew up without the Internet to individuals who grew up with omnipresent Internet access over the course of half a generation. Even more starkly, the advent of the (inexpensive) portable camera, along with photographic paper and film rolls that enabled easy and cheap processing of photographic images, led to the extremely rapid and widespread diffusion of the ability to record and disseminate visual images in the late 1800s. As evidenced by the tone (and influence) of *The Right to Privacy* (published a scant two years after the invention of the Kodak) this led to the rapid and distinct disruption of the legal institutions surrounding privacy – a disruption that has continued through the development of modern technology and that we are still working to resolve today. In such a setting, technological change and legal institutions can easily be in tension. This tension is explored in Part III.

## III Dueling Views of Contemporary Technology and the Law

Elements of classical liberal philosophy have featured prominently, if accidentally, in contemporary discussions of the regulation of technology.

Roughly mirroring the advent and growth of the commercial Internet, many technologists – and, in many ways, the tech industry writ large – have embraced various forms of liberty-focused, and generally liberty-maximal, philosophies. By and large, these individuals label themselves as libertarians of one form or another (whether libertarian, cyberlibertarian, cryptolibertarian, technolibertarian, cryptoanarchist, or some other variant). Although they rarely identify as “classical liberals” (indeed, it is likely that few are even familiar with that term), their priors are nonetheless closely related to those of classical liberals. These views, therefore, provide a useful survey of views on the contemporary relationship between technology, liberty, and the law.

The discussion that follows divides these views into two broad categories: “extreme” and “moderate” libertarian views. In both cases the reference is to little-l libertarian, indicating that these are liberty-focused philosophies. The extreme libertarian view generally views technology as liberty-maximizing, so tends in turn to be strongly permissive of technological change. The moderate view also views technology as liberty-enhancing, but is more circumspect about technology’s ability to undermine the protection of important autonomy values.

## A The Extreme Libertarian Embrace of Technology

Libertarianism is related to, but (we contend) more restrictive than, classical liberal philosophy. In its more extreme form, it takes the preference for private ordering that classical liberalism rests upon and extends it to its maximum extent. Under this form – often referred to as a variant of anarchism or anarcho-capitalism – the only morally acceptable order is the purely private order. The state, based as it is on a more-or-less involuntary premise (i.e., that it has a monopoly on the use of force, and an individual cannot opt out of it) is to be avoided as a source for rule making and enforcement.

In the contemporary technological setting, this branch of thought often falls into one of three categories: cyberutopianism, cyberexceptionalism, or cyberanarchism. These are not meant to be precisely defined categories – indeed, there is substantial overlap between each. But this categorization typifies key features of contemporary, extreme libertarian views on technology.

Cyberutopianism, as exemplified by John Perry Barlow's *Declaration of the Independence of Cyberspace*, is the notion that the traditional legal rules developed to handle disputes in the “real” world are wholly inapposite in online environments because the innate, exalted characteristics of the online world render them superfluous (and even deleterious):

Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.

We have no elected government, nor are we likely to have one, so I address you with no greater authority than that with which liberty itself always speaks. I declare the global social space we are building to be naturally independent of the tyrannies you seek to impose on us. You have no moral right to rule us nor do you possess any methods of enforcement we have true reason to fear.

\* \* \*

You claim there are problems among us that you need to solve. You use this claim as an excuse to invade our precincts. Many of these problems don't exist. Where there are real conflicts, where there are wrongs, we will identify them and address them by our means. We are forming our own Social Contract. This governance will arise according to the conditions of our world, not yours. Our world is different.

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We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity.

Your legal concepts of property, expression, identity, movement, and context do not apply to us. They are all based on matter, and there is no matter here.

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We must declare our virtual selves immune to your sovereignty, even as we continue to consent to your rule over our bodies. We will spread ourselves across the Planet so that no one can arrest our thoughts.<sup>24</sup>

Barlow's views captured the zeitgeist of the moment – a sincere belief that “cyberspace” was a new and better place than the physical world. It was a place in which individuals could explore and express their liberty in the purest and most extreme forms possible, and could do so free of the constraints of the physical world or territorial governments – and possibly even without concern for encroaching upon the autonomy interests of others.<sup>25</sup>

Today, the utopianism of Barlow's vision of the cyber has fallen from its once dominant intellectual position, though strands of it remain in the cyberanarchist perspective (discussed below). Rather, as the Internet grew in social, economic, and political importance – and, importantly, as the Internet came to distinguish itself more for its transformative ability to facilitate (and extend) the same sorts of social interactions that occurred offline, rather than as the birthplace of an entirely new kind of social order – the same social, economic, and political institutions important in the offline world naturally came to exert influence in the online world. These efforts occurred largely through the

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<sup>24</sup> John Perry Barlow, *A Declaration of the Independence of Cyberspace* (1996), available at [www.eff.org/cyberspace-independence](http://www.eff.org/cyberspace-independence).

<sup>25</sup> Barlow was not alone in his views, although his powerful prose captured the imagination of many. See also, for example, Esther Dyson, George Gilder, George Keyworth, and Alvin Toffler, *Cyberspace and the American Dream: A Magna Carta for the Knowledge Age*, Progress & Freedom Foundation Future Insight No. 1.2 (Aug. 1994), available at [www.pff.org/issues-pubs/futureinsights/fi1.2magnacarta.html](http://www.pff.org/issues-pubs/futureinsights/fi1.2magnacarta.html).

operation of existing legal principles and, where necessary, the establishment of new legal rules designed to extend those principles into the online world. This intrusion of offline institutions into the new online space gave rise to the next – and arguably still dominant – wave of extreme cyberlibertarianism: cyber-exceptionalism. The cyberexceptionalist perspective is to accede that cyberspace *can* be brought to heel by traditional institutions, but that it *should* be exempted from such treatment.

One of the more influential strains of cyberexceptionalism is so-called permissionless innovation. Permissionless innovation holds that individuals should be able to operate and innovate online (and, in fact, in the realm of information technology more generally) without impediment from any authority. In its most extreme view this includes not only government actors directly, but also private parties whose assertion of property or contractual rights might “impede” others’ ability to freely innovate.<sup>26</sup> In its most fully developed form, permissionless innovation holds that the state should, short of compelling circumstances, refrain from interfering with private ordering in the digital context entirely. Adam Thierer has characterized this position as:

the notion that experimentation with new technologies and business models should generally be permitted by default. Unless a compelling case can be made that a new invention will bring

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<sup>26</sup> See Geoffrey Manne, *Permissionless Innovation Does Not Mean “No Contracts Required,”* TRUTH ON THE MARKET (Jun. 26, 2014), <http://bit.ly/2t0k6fV>. This version of permissionless innovation thus implicitly hearkens back to cyberutopianism, shunning even private ordering if it is facilitated by traditional institutions, denying, in effect, that the “harm” of contract or property law violations exist in cyberspace.

serious harm to society, innovation should be allowed to continue unabated and problems, if any develop, can be addressed later.<sup>27</sup>

This view is focused almost entirely on the positive value of innovation, holding that the gains from innovation will tend to overwhelm any potentially complicating realities, or that potential complications will themselves be addressed by subsequent innovation. Thus, Internet platforms should be permitted to experiment with new services without *ex ante* constraint, even though we understand, for example, that third-parties often use these platforms for illicit purposes. The exceptionalist perspective is that concern about those illicit uses does not justify placing any limits on the development of new technological platforms.

The advent of the automobile, for instance, was overwhelmingly positive for society, even though it upended much of tort law. Likewise, the advent of driverless cars will certainly lead to new ways for people to be injured and hard questions for the law in assessing and apportioning liability for those injuries – but it will likely make automobiles substantially safer than they are today and increase the efficiency (and decrease the costs) of driving so substantially that we should push ahead in the development of the new technology and address such concerns once the technology has arrived.

Similarly, the Internet has unquestionably been one of the most beneficial and important developments in the history of humankind – but it has also facilitated child pornography and other forms of exploitation on a scale never before known. The exceptionalist perspective is that the new technology should

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<sup>27</sup> ADAM THIERER, PERMISSIONLESS INNOVATION: THE CONTINUING CASE FOR COMPREHENSIVE TECHNOLOGICAL FREEDOM 1 (revised and expanded, 2016).



be forgiven these ills in favor of its overwhelming benefits.<sup>28</sup> Particular implementers or users of new technology who use it to harm others should be penalized accordingly, but the technology itself should not be constrained in order to deter such harm – even if the most (or only) practical way to do so is by limiting the technology (and even if users’ ability to evade the law is, in fact, a function of the new technology). The exceptionalist perspective holds this view even despite the fact that, in numerous offline situations, just such “intermediary liability” is common.<sup>29</sup>

The rationale for this exceptionalism is that new technologies are less likely to develop if their developers are held accountable for the harms that some will inevitably use them to cause. Such liability would increase the costs of new

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<sup>28</sup> According to many proponents of cyberexceptionalism, in fact, this immunity has been written into US law. *See* 47 USC § 230(c)(1) (“No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another [provider or user].”). Courts have largely been willing to go along with the exceptionalist interpretation of this language. *See, for example*, David S. Ardia, *Free Speech Savior or Shield for Scoundrels: An Empirical Study of Intermediary Immunity Under Section 230 of the Communications Decency Act*, 43 LOYOLA LAW REVIEW 373, 435 (2010) (finding that Section 230 provided immunity to defendants in over sixty percent of relevant cases).

<sup>29</sup> Courts have long dealt with out-of-reach offenders by enjoining the conduct of intermediaries: *for example*, by prohibiting local stores from selling foreign-manufactured counterfeit goods, or requiring that taverns prevent patrons from driving drunk.

technologies – especially “generative” technologies (i.e., technologies (like platforms open to user-generated content and peer-to-peer interactions) that can give rise to new, unpredictable, uses). At the same time, once the technology is established, suitable institutions can be put in place to protect against specific, harmful uses of the technology.

This view of permissionless innovation is liberty-maximalist, both in the short run and the long run. It frees innovators to develop new technologies as they see fit, furthering their liberty interests. And successful technologies will tend to be those that benefit others, enhancing their liberty interests as new technologies are developed and permeate the market.

But this view is also autonomy-agnostic. It pays no heed to concerns that a given technology may tend to be used to cause harm to its users or to third parties, and expressly argues that harmed parties be denied recourse against the implementers of the technology for such harms. Importantly, this is the case even where future harms are predictable, and even where the technology is developed in such a way that it makes it particularly easy for parties to be harmed or difficult for them to seek redress. In other words, under dominant cyberexceptionalist views, platforms and intermediaries are under no obligation to design their technologies in ways that prevent harm, allow for recovery when harm occurs, or even facilitate action being taken against the party causing harm.<sup>30</sup>

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<sup>30</sup> Again, this approach largely harkens back to the cyberutopian view that in a very real sense traditional conceptions of “harm” do not apply online, because cyberspace is not bound by the physical or social constraints of the real world that prevent a harmed party from removing themselves from a harmful situation or engaging in self-help.

The third category of extreme libertarian views on technology is different in kind, although it draws on ideas from both cyberutopianism and cyberexceptionalism. Cyberanarchism views technology as a remedy against the sins of the state. This view is particularly prevalent in contemporary discussions about privacy, surveillance, encryption, and cryptocurrencies. Cyberanarchism views government surveillance in particular – whether through wiretaps and warrants, the intelligence community, collection of public information, or issuance of subpoenas to collect information from private platforms – as an undue encroachment on individual autonomy and an impermissible limit on liberty. Technology can and should be used to frustrate these governmental functions, thereby enhancing liberty.

There is, of course, an obvious trade-off with such an approach. Cryptocurrencies, for instance, were developed at least in part to provide an anonymous and largely untraceable alternative to fiat currency and traditional online payment systems. In many contexts anonymity in financial transactions is valuable, of course, but cryptocurrencies can be and are used to facilitate harmful or criminal conduct. Likewise, TOR and other encryption technologies have enabled individuals to trade illicit goods and services as well as nonillicit goods and services under anonymous conditions. Privacy-enhancing encryption technologies are also broadly seen as tools to circumvent state restrictions on speech (particularly in hostile regimes), and to avoid state surveillance.

Although it is true to some extent for all of the different strains of the extreme libertarian view, for privacy and cryptocurrency advocates, in particular, technology is viewed as a means for resisting any government

regulation – and even private ordering abetted by government institutions – completely.

Cyberanarchism hearkens back to the central cyberutopian view of the fundamental illegitimacy of government, especially in the technological age – that those “Governments of the Industrial World, [] weary giants of flesh and steel ..., are not welcome among us [and] have no sovereignty where we gather.”<sup>31</sup> Of course, this assumption of illegitimacy is rejected by the classical libertarian perspective. It is surely the case that some of the government functions that animate these causes are illegitimate excesses. But others are not, and these technologies do not discriminate between interfering with illegitimate and legitimate government functions.<sup>32</sup>

## **B The Moderate Libertarian Embrace of Technology**

It is almost a misnomer to characterize the moderate techno-libertarian position as an “embrace.” The moderate libertarian or classical liberal perspective on

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<sup>31</sup> Barlow, *A Declaration of the Independence of Cyberspace*, *supra* note 24.

<sup>32</sup> A prime example of this tension was the court order requiring Apple to render assistance to law enforcement by defeating encryption on one of its iPhones. *See In the Matter of Search of an Apple iPhone Seized During Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203*, No. ED 15–0451M, 2016 WL 618401 (C.D. Cal. 2016). Although arguably resting on fairly well-established legal footing, the court’s order, based on the All Writs Act, 28 U.S.C. § 1651, was met with cries of outrage from certain techno-libertarian quarters. This outrage, again, was premised on the idea that there is something unusual about data and digital devices that warrants a completely different legal treatment. But, as with other instances of such extreme cyberexceptionalism, the explanation about just *why* it is that technology should be in a legal class of its own was never adequately explained.

technology is, at root, nothing special, insofar as classical liberals do not presume that any social construct should receive a *per se* different treatment under the law.

The moderate libertarian view admits room for the state to establish a framework of neutrally administered and enforced rules against which individuals arrange their private ordering. Technology is evaluated by its effects upon the rule-based expectations of individuals, and is not regarded as inherently outside of (but acting upon) the legal order. Fundamental to this approach is the view that technology is not regarded as exceptional in any *a priori* sense; it matters only how it is used or how it affects the optimal institutional ordering. Technological innovations do often offer significant benefits (not only in terms of liberty and autonomy, but general consumer welfare), of course, and any benefits arising from the adaptation and application of existing legal rules should be weighed against the possible costs of deterring the creation or welfare-enhancing deployment technology. But in principle any technology, no matter how revolutionary, can be brought within the ambit of predictable, neutrally administered legal rules.

One key component of the moderate libertarian view is that immunity from established legal principles should not be assumed even if extension of those principles to new technology requires novel applications of common law precedents, or even the adoption of new regulations or legislation. Internet platforms, for example, may entail a *different* liability structure, but there is no reason to believe that they should engender *no* liability as a result.

Unlike the more extreme approaches, the moderate libertarian approach to technology would not inherently object to extraterritorial application of a country's laws, for example, as is often necessitated on the Internet. While cloud-based activity and cross-border data flows can be particularly complicated to untangle, this does not mean that territorial courts should be presumed unable to adjudicate disputes arising out of multi-nation digital trade. Courts are skilled at parsing conflicts of laws, as well as parsing facts in complex or difficult cases. Determining jurisdictional competencies for Internet-based disputes is only a difference of degree, not of kind.

Similarly, under the moderate libertarian view, technologies that are used to secure privacy online or in the cloud will have to yield in some cases to the needs of the state, just as in the offline context. For instance, although the answer may not be to build in purposeful security holes such as back doors, in cases where a firm *could* theoretically help override encryption, as in the Apple-San Bernardino dispute,<sup>33</sup> they can lawfully be required to do so.

Intellectual property ("IP") draws into stark relief the distinction between the hard-core and more-moderate libertarian approaches. IP presents a rather unique circumstance. By defining a property right around a novel technological idea (patent) or original expression, including of technologically sophisticated software code (copyright), IP comes close to treating technological advance itself (as opposed to the use or implementation of technology) as exceptional.<sup>34</sup> In this

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<sup>33</sup> See generally Justin (Gus) Hurwitz, *Encryption<sup>Congress</sup> mod (Apple + CALEA)*, 30 HARVARD JOURNAL OF LAW AND TECHNOLOGY 355 (2017).

<sup>34</sup> It is important to note, however, that (under US law, at least) both patent and copyright law encompass core elements that mitigate this exceptionalism to some extent. For an idea (invention) to be granted a patent, for

sense, it could be argued, the mere definition of IP rights represents a problematic extension of the legal order beyond a system necessary for mitigating transaction costs to one that inherently curtails liberty *regardless* of countervailing social gain: Because IP rights are granted before any welfare-improving transaction is undertaken, even essentially valueless technology can receive IP protection, subject only to the (largely arbitrary) cost to an applicant of obtaining it.<sup>35</sup> For moderate libertarians, however, a system of IP rights readily overcomes this apparent defect.

Not surprisingly, however, the hard-core libertarian argument against IP extends from precisely this apparent quirk. Hard-core libertarians generally advance two arguments against IP. First, IP is a creation of government: As suggested above, not only the *ex post* regulation of technology, but its very

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example, it needs to be *useful*: It cannot exist merely as an abstract idea, but must be a functional “process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. And for original works to receive a copyright they must be “fixed in any tangible medium of expression ... from which they can be perceived, reproduced, or otherwise communicated.” 17 U.S.C. § 102(a). Again, it is clear from this statutory limitation that abstractions *per se* will not receive protection unless they are actually implemented in a useful form. Nevertheless, these eligibility requirements do not *entirely* undermine the idea that “technology,” rather than “the use of technology” is protected by IP rights because, once the conditions of eligibility are met, IP protections extend beyond those limitations to restrict others’ implementation of the new technology.

<sup>35</sup> Because copyright attaches automatically to any original expression once it is fixed in a tangible medium, even this limitation doesn’t exist. Of course, the investment required (including opportunity costs) to create a patentable invention or copyrightable work acts as a limitation, as well, and one that is decidedly more closely related to expected social value. But even ideas discovered accidentally and (nearly) trivial works of authorship are still eligible for protection, so there remains a significant scope for legal constraints to attach even without any indication of their social value.

definition through patent or copyright is an “artificial” function of statute. Moreover, because this government-created property right entails a right to prevent unauthorized use of protected technology and the concomitant right to extract monopoly rents in exchange for authorization (license), it amounts to an unjustifiable (and possibly inefficient) government transfer of rents. Second, unlike real and personal property, another’s use of an idea (or copying of an expression) is not inherently rivalrous: it can be accomplished without depleting the idea or expression and without limiting anyone else’s ability to implement or copy it. Similarly, absent enforcement of the artificial, government-granted monopoly (or concealment), it is *very* difficult (if not impossible) to exclude others from the use an idea or of copyright-protected content, particularly digital content. On top of all of which, the system for granting and enforcing IP rights is costly and, inevitably, complex. As a result, so the argument goes, IP rights erect artificial and costly impediments to the liberty of people to do (and say) what they will and should not be enforced.<sup>36</sup>

But this is, yet again, a case of cyberexceptionalism. Property rights, if they have any meaning or utility, are always creatures of the government. In fact, as we have noted, a central feature of libertarianism is the recognition that the definition and enforcement of property rights is inarguably a valuable function of government. Without the implicit imprimatur of the state on one’s claim to a particular “thing” (whether tangible or intangible), the value of that claim (and thus the thing itself) is approximately zero.

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<sup>36</sup> See, for example, Tom W. Bell, *Indelicate Imbalancing in Copyright and Patent Law*, in *COPY FIGHTS: THE FUTURE OF INTELLECTUAL PROPERTY IN THE INFORMATION AGE 4* (Adam Thierer & Clyde Wayne Crews Jr. eds., 2002).



No one can defend any system of property rights, whether for tangible or intangible objects, on the naïve view that it produces all gain and no pain. Every system of property rights necessarily creates some winners and some losers. Recognize property rights in land, and the law makes trespassers out of people who were once free to roam. We choose to bear these costs ... because we make the strong empirical judgment that any loss of liberty is more than offset by the gains from manufacturing, agriculture and commerce that exclusive property rights foster. These gains, moreover, are not confined to some lucky few who first get to occupy land. No, the private holdings in various assets create the markets that use voluntary exchange to spread these gains across the entire population ... [T]he inconveniences [IP] generates are fully justified by the greater prosperity and well-being for the population at large.<sup>37</sup>

It is also important to note that the presumed “monopoly” granted by IP rights is not actually a monopoly in any meaningful sense. Because patent rights and copyrights are limited in both time and scope, they do not foreclose the development and implementation of competing ideas or competing expressions any more than the owner of a single house can avoid competition from her neighbors.

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<sup>37</sup> RICHARD A. EPSTEIN, *INTELLECTUAL PROPERTY FOR THE TECHNOLOGICAL AGE 8* (Manufacturing Institute, 2006).

## IV A Classical Liberal View of Technology and the Law?

On first blush, it seems that the moderate position on technology (more accurately, technological advance) enjoys the better claim to the mantle of classical liberalism – and in many ways it does. While the extreme position appears to be more acutely protective of liberty from government interference, its myopic focus on freedom from all constraints leads it to reject even transaction-cost-reducing rules that further autonomy and voluntary exchange and thus overall social welfare.

Consider the concept of permissionless innovation again which, as noted, is important to both the moderate and extreme liberal positions regarding technology. On the one hand, the extreme version of permissionless innovation does not stand for neutral application of generally applicable legal rules and principles to new technology, but for the avoidance of all legal rules that might constrain the ability to develop any particular, new technological advance. This view of permissionless innovation – the extreme libertarian view – treats even *private* constraints arising out of enforceable property rights as inherently outdated. It is, under this approach, a problem not only that innovators might have to seek “permission” from the government to deploy new technology, but that they might have to seek it from private property holders through contract or license – by transacting with them, in other words. On this view, the transaction itself becomes an unjustified cost, and rules that enable rightsholders to limit an innovator’s liberty – even if efficiently – are problematic. This seems too

solicitous of liberty and too dismissive of autonomy and the broader, systemic benefits of well-defined property rights.

On the other hand, the moderate view runs the risk of naïve deontology, embracing and preserving rules for their own sake. The moderate position is that permissionless innovation denotes the ability to experiment, enter into transactions, and develop and deploy new technology without requiring the adoption of new rules that apply with special force to new technology, that overly constrain it out of excessive fear of its potentially harmful effects, or that protect incumbents from new competition. It would, at the extreme, seem willing to sacrifice even welfare-enhancing innovation for the sake of legal constancy: the continued, neutral application of existing rules and the avoidance of new rules, regardless of whether either would clearly further technological advance.

The problem with this view, of course, is that there is no inherent reason to think that the specific, *status quo* structure of rights is optimal in the face of any given technological change, particularly, as we have noted, when it is relatively rapid, disruptive change. The classical liberal embrace of rules and legal institutions is consequentialist and utilitarian, not deontological: public rules are needed solely because we gain more from their ability to facilitate private ordering and preserve autonomy interests than we lose from the constraints on liberty they entail. But that (emphatically) does not mean that any specific rules *per se* are worth the cost. The challenge is understanding how rules should evolve alongside changing technologies.

We frequently see this on vivid display in regulated industries that undergo technological disruption: as the cost and reliability of air travel

improved leading to commoditization; as electricity generation was separated from transmission and became increasingly competitive; as new network technologies enabled the transition from a monopoly telephone network to one of widespread intermodal competition; as ride-sharing platforms like Uber and Lyft have disrupted heavily regulated taxi monopolies. Most classical liberals would cheer the disruption of these legal regimes and celebrate the technological innovation that hastened the transition away from industry-specific regulatory regimes.

In fact, this is the case even as we can recognize the losses faced by the energy company with stranded investments, the telecommunications carrier whose rate of return was dependent on regulated prices, and the driver who paid \$1 million for a taxi medallion that is now worth a quarter of that. Recall Richard Epstein's important point that "[e]very system of property rights necessarily creates some winners and some losers ..., [but] the inconveniences ... are fully justified by the greater prosperity and well-being for the population at large."<sup>38</sup>

The "losses" here are largely only distributional; they arise because the rejiggering of property rights enables technology to expand the size of the pie, even as it also redistributes the pieces. But it is the *transition* from one state of affairs to another, frequently brought on by technological advance, that creates the appearance of loss. Behind the metaphorical veil of ignorance, everyone would prefer technological dynamism to stasis, even with the disruption it entails. For the same reason, classical liberalism should countenance some reordering of rights in order to facilitate or respond to new technology.

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<sup>38</sup> Id.

Thus, an important and underappreciated role of technological change is to highlight these fault lines between appropriate, transaction-cost-reducing background rules and those laws and regulations (or specific enforcement decisions of otherwise-desirable background rules) that may *appear* to facilitate trade, but really impede the creation of wealth and the exercise of liberty.

Not that it requires an Uber to see that taxi medallions are almost certainly examples of the latter, and not the former. They constrain non-medallion holders' liberty without even facilitating value-maximizing transactions for those who hold them. But it does often take an Uber to bring into relief the but-for world that such laws deter. Absent this information, the classical liberal approach is far less likely to succeed in influencing law and policy – in overcoming the politics and rent-seeking that prop up welfare-limiting or -reducing laws or allow them to come into existence in the first place. There is thus a second-order – and ironic – benefit to the more extreme libertarian position, which would, at the margin, enable deployment of more disruptive technologies, some number of which will confer this political economy benefit – improving the reliability of the law – independent of the direct benefits they may also entail.

If the extreme position can be too ... extreme, the moderate position can be too cautious, overweighting present autonomy interests (the protection of existing property rights and the ability for their holders to demand license) and underweighting future liberty interests (the ability to undermine existing property rights for the sake of dynamic efficiency gains). But unless we are able to reduce transaction costs far beyond what is likely, the optimal classical liberal

position will still require background rules: So long as transaction costs exist, rules will be required and the challenge will be to implement the rules that yield the most efficient of outcomes.

While there can be little doubt about the inefficacy of maintaining status quo regulatory regimes in the face of technological change, the classical liberal position is not so obstinate. When it comes to the intrusive, industry-specific, regulatory oversight of the administrative state that has come to dominate in the contemporary era, the classical liberal position is invariably skeptical, and technological change is one of the most important reasons for classical liberal efforts to unwind (or prevent) such regimes in the first place: For the classical liberal, most such regimes are ill-advised from the start.

But things are more complicated when it comes to rules of general applicability. It is more difficult to countenance abrupt shifts in overarching regimes governing things like competition, intellectual property, privacy, and consumer protection (among others). Not that even these regimes are likely optimal *ex ante*, of course. But the inherent tension between liberty and autonomy interests is somewhat more complicated to resolve when technological advance disrupts them.

This is particularly true where such regulatory regimes were adopted to address perceived lacunas in the basic realms of operation of the common law, often brought about by previous technological change. In the main, it is important to note, classical liberals favor customary and common law.<sup>39</sup> These

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<sup>39</sup> See generally FRIEDRICH A. HAYEK, THE CONSTITUTION OF LIBERTY (1960); FRIEDRICH A. HAYEK, LAW, LEGISLATION AND LIBERTY: A NEW STATEMENT OF THE LIBERAL PRINCIPLES OF JUSTICE AND POLITICAL ECONOMY (1973).

evolutionary systems adapt to technological (and other) changes over time, maintaining relative constancy, minimizing the frustration of expectations, and eschewing preemptive constraints that may turn out to be inefficient or otherwise undesirable. But statutory rules of general applicability also evolve through iterated judicial enforcement (in part in response to technological changes), and also effect an allocation of property rights and set expectations.<sup>40</sup> While the slow, deliberate evolution of the common law is certainly preferable, where they exist, the relative constancy of these longstanding statutory schemes is similarly important in maintaining the background rules against which transactions take place.

The central tension here is that classical liberalism posits the need for legal institutions to promote private ordering, but these institutions themselves are often established, maintained, enforced, and updated through a process of public ordering. Indeed, even institutions that evolve through private ordering quickly take on a public character in any society beyond a trivial level of complexity.<sup>41</sup> And such rules can easily fall victim to the perils of public choice, erring on the side of excessive constraint due to limited knowledge, an excess of caution (the so-called precautionary principle), and the lure of rent extraction.

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<sup>40</sup> The operative language of Section 1 of the Sherman Act, for example, comprises the following: “Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.” 15 U.S.C. § 1. The courts have, for the 125 or so years of the law’s existence, been responsible for interpreting the law and giving it its real content (subject, of course, to the strong influence of enforcement agencies’ exercise of their prosecutorial discretion).

<sup>41</sup> See generally ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (1990); ROBERT ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991).

The very rules that classical liberalism depends upon in order to ensure private ordering and autonomy can be captured through public means to *limit* private ordering and undermine autonomy. The extreme libertarian position has the undeniable virtue that it is a purely private mechanism, one that can disrupt legal institutions that have lost their way – even if that disruption has great costs. So too does the classical liberal’s common affinity for the common law – an institution in which changes to the law are predicated on private disputes, which serves to check the problematic characteristics of public ordering.<sup>42</sup>

## Conclusion

Classical liberalism is often conflated with libertarianism, and, on issues relating to technology, libertarianism writ large is often conflated with particular strains of anarcho-capitalism and techno- and crypto-libertarianism. These strains embrace extreme views of the liberty-enhancing potential of technology. But they are also in tension with the classical liberal acceptance of a minimal set of legal institutions as necessary to protect individual autonomy and promote stable private ordering. Indeed, the hallmark of much of the techno-libertarian ideal is disruption – including disruption of the very institutions that classical liberalism identifies as necessary in order to promote individual liberty and social welfare.

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<sup>42</sup> See, for example, Justin (Gus) Hurwitz, *Data Security and the FTC’s UnCommon Law*, 101 IOWA LAW REVIEW 955, 981 (2016) (discussing that, while common law judges do make law, “they do not embrace this function warmly,” and the various obstacles that exist to limit the scope of judicial rule making).



This suggests tensions between the classical liberal and the ascendant libertarian impulses that drive many in the modern technology sphere. These tensions are real. But the greater tensions are within classical liberalism itself. Classical liberalism accepts – even posits – the need for legal institutions, but does not provide an endogenous explanation for the origins, extent, or nature of those institutions. Contemporary thinkers in the classical liberal tradition are likely to ground these institutions in welfare and transaction cost economics. But technological changes can lead to meaningful changes in transaction costs and shifts in the allocation of social welfare (that is, the efficient ordering of private resources). In other words, technology is exogenous to the principles of classical liberalism, such that the fundamental institutions of classical liberalism are themselves defined (at least in part) exogenously. This leads to the peculiar result that, lacking internal principles to guide the private ordering of its institutions, classical liberalism must rely in part on a public ordering of the institutions that govern the private ordering that it seeks to facilitate.

The modern era of disruptive technology has magnified this tension. There is little question that much of modern technological advance ends up enhancing liberty and promoting private ordering. But disruption almost by definition implies winners and losers, and the spoils of disruption do not necessarily fall efficiently, either to the winners or the losers. The classical liberal prefers Pareto efficient transactions, and is relatively averse to transactions that are merely Kaldor-Hicks efficient. But technological advance – and especially disruptive advance – places us squarely in the uncomfortable realm of Kaldor-Hicks efficiency: Either we allow disruption, allowing harm to those disrupted; or

we deny disruption, denying benefits to would-be disruptors. Without both a sense of the magnitude of harm and an efficient means by which to compensate for it, we are no longer operating in the realm of voluntary private ordering – that is, in the realm of classical liberalism.

The safest response to this conundrum for the committed classical liberal is likely to recommit to the basic principle of simple rules developed through the common-law mechanism. These are least likely to be disrupted and most likely to transfer relatively unscathed between technological regimes. Too often legal institutions have embraced complexity, either on their own or in response to specific technologies. Such complexity runs counter to classical liberalism and compounds the confounding conundrum that technology poses to principle. Instead, when confronted with technological change, classical liberalism's future more likely lies in its past. As usual, Richard Epstein got things right: "The proper response to more complex societies should be ever greater reliance on simple legal rules, including older rules too often and too easily dismissed as curious relics of some bygone horse-and-buggy age."<sup>43</sup>

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<sup>43</sup> RICHARD A. EPSTEIN, *SIMPLE RULES FOR A COMPLEX WORLD* 21 (1995).