Constitutional Morality and the Rise of Quasi-Law:
A Symposium

Constitutional Morality and the Emerging Social Imaginary of the Information Revolution

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Introduction

A recent report of the professional association for electrical engineers, IEEE (IEEE 2019), calls attention to the importance of technology for politics. It describes the aims of engineering the new legal information technology this way: "Ultimately, our goal should be *eudiamonia*, a practice elucidated by Aristotle that defines human well-being, both at the individual and collective level, as the highest virtue for a society" (IEEE 2019, 2). The association with the Aristotelian tradition of virtue ethics may at first seem surprising since the consumerist values of Silicon Valley typically run towards anti-teleological perspectives. But, as the report notes, the information and computing technologies (ICT) that are being developed are "specifically designed to reduce the necessity for human intervention in our day-to-day lives." And for this reason, it is "raising concerns about their impact on individuals and societies" (IEEE, 3). This admission is a significant moment, which finds the professional association for electrical engineers acknowledging Aristotle's claim that "all communities aim at some good" (*Arist. Pol. I.* trans. *Jowett*, 1252.5) (Aristotle 1996, 1986) and "the good has rightly been declared to be that at which all things aim" (*Arist. NE I*, trans. *Ross*, 1094.2) (Aristotle 1996,

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1729). This moment is born of the recognition that the new technologies are creating a complex interplay of new practices, institutions, and ways of understanding that hold profound opportunities and pose the foreboding of new malaise (social dissolution, nihilism, and extreme forms of utilitarianism). What the future holds has not been written yet, which is why this time is ripe to consider challenges posed against the traditions and assumptions already challenged by modernity itself.

The reflection intended in this article is given considerable advantage by the valuable statement and defense of the traditional understanding of American democracy found in *Constitutional Morality and the Rise of Quasi-Law* (Frohnen and Carey 2016). By using this work as a guide, it is possible to understand some challenges posed by the concepts and applications of ICT. The information age emerging today is led by new conceptions and the unprecedented powers of machines that perform functions far better than the human mind can hope to achieve. Critically, this includes new machines that can find correlations in the data generated by the legal system that allow for accurate predictions of legal outcomes. These correlations are subtle, often too subtle for a mind to detect. But the contemporary practice of law would be difficult if not impossible without their predictive power. The significance of this is suggested by the important role that law's predictability has played in shaping the traditional conceptions of the rule of law and of American constitutional morality. But, to date, the rise of these prediction engines has received little consideration by political theorists or ethicists. And yet the challenges are profound, and the way ahead is uncertain. Choices about the future possibilities for democracy and the place of humanity in the interconnected webs of networked computer systems remain in doubt. It is the emergence of a new social imaginary that will confront the core beliefs and moral meanings that have guided human thought for thousands of years.

I. The Foundational Concepts of the Social Imaginary

The claim advanced in this part of the essay is that the rise of ICT represents the beginning of a new social imaginary. A first point is to observe that the technologies of gathering, organizing, and analyzing information have been transformative throughout human history. The concept of history itself is an artifact of literacy, which is itself an information technology. The written word freed human minds from the tasks of memory and allowed for developing more detailed and reflective analysis. Without it, there would be no historical documents or much

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critical reflection on past events and past thoughts. Besides history, philosophy, theology, music, mathematics, and law were early beneficiaries of literacy. As writing developed into print, and print became mass media, information technologies shaped culture and enabled the human mind to extend beyond itself in multitudes of ways.

The early twentieth century can be considered as a culmination of the previous information revolutions. By mid-century, several new concepts and new forms of analysis were developed, which led to rapid growth in complexity in unprecedented ways. Several factors contribute to this. One factor is that the fundamental concepts of the information age dramatically altered human self-understanding. This change in foundational concepts can easily be overlooked, since they have become so seamlessly integrated into common understanding, with their former meaning rarely considered. But the new conceptions of *information* and *computation* were derived from mathematics in the early part of the century. Both of these concepts have ancient usage, but early twentieth-century applications to mathematical relations altered the way they are commonly used and understood. Information and computation referred to human faculties of mind. To speak of information was to speak of a mental phenomenon whereby the forms of thought (*intentio*) were brought together. To inform someone meant to pass mental objects (*esse intentionale*) from one to another. And computation generally referred to the human capacity to perform the type of rigorous thinking that is necessary for careful, logically constructed discursive reasoning. Human beings had these faculties, but plants and animals did not. The thought of a dog, let alone a petunia, performing a calculation was preposterous.

In the information age, all of that was changed through the work of two mathematicians, Claude Shannon and Alan Turing. Their conceptual changes suggest the sweeping nature of changes that are occurring and why they may lead to a new social imaginary. Shannon changed the concept of information by using it to describe a signal passed through a wire. He was working at Bell Labs in the late 1940s when they were laying longer and longer wires and finding that interference from natural sources was distorting the signal. Shannon described the problem in terms of sending and receiving information and separating the information from the noise (Shannon and Weaver 1948). It proved to be an extremely powerful idea that is used today in every digital device from memory chips to interplanetary space probes. Information is the order that can be lost. It is like entropy, which was described by physicists in the nineteenth century. Similarly, Alan Turing developed a non-human

concept of computation called a Turing machine (Turing 1936-1937). He demonstrated with very sophisticated mathematics that it was possible to solve the computational problems that could be broken into a sequential process that we now call an algorithm. This is important because by proving that human beings are not unique in their ability to compute, he displaced human beings from their historical place at the apex of nature in the social imaginary. As information beings, we are only particular instances among others that occur as physical processes in the natural unfolding thermodynamic processes. Together, the concepts of information and computation hold significance today, not only as the foundations for the technological revolution enveloping day-to-day life, but also because they challenge traditional conceptions of human nature. The rise of the philosophy of information is one of the most profound and influential challenges because its holds significance for many philosophical topics, including ontology, epistemology, philosophy of mind, and ethics. It is the foundation of the emerging social imaginary.

The second development is the new form of artificial intelligence known as machine learning. It developed from the creative application of information technology to the modeling of human intelligence. There have been false-starts in developing such AI systems, but in the past few years a rapid succession of landmarks was achieved by new computer hardware and software techniques. These new machine-learning systems represent a substantial enhancement of human cognition for their ability to find patterns in data far too subtle for human detection. This means that different types of data can be related. Connections in economic data and law, for example, can be found that were not visible. And, patterns of connections among word usage, rules, cases, judges, lawyers, and litigants can be described. Prediction can be made with accuracy. This development, which pertains to a wide range of human phenomena, including law, changes the metatheory of legal philosophy and the methodologies for pursuing it. Hart's folk understanding of law today must account for the ease with which the lay person can now access legal information, documents, and references. In the future, AI will be guiding lay people to the rules and commentary relevant to them. The informational structure of law (called a legal ontology in the field of informatics) is still under development. As research grows in this field, the influence of AI on the nature and practice of law will also grow.

But the influence of AI is not limited to the social sciences. The new information perspective also holds implications for ethics. The moral meaning of AI is explored by ethicists like Luciano Floridi (Floridi 2011)

(Floridi 2013). He argues that humans exist as information agents in an infosphere, which is the total sum of information in an environment. From the perspective of information science, the human is not a unique kind, but only a unique occurrence, among a multitude of information agents. Humans are particularly complex instances of agents, with responsibilities for the healthy maintenance of the information environment as a whole. These responsibilities include the care and maintenance of other information agents, like the sunfish and honeysuckle that thrive in the lakes and meadows. Whatever the merits of this understanding, it is transformative. Humans are decentralized in a Copernican revolution that positions them as holding commonalities with other material beings that are evolving complexity within a slowly dissolving universe. Entropy increases as information systems eventually become more ordered and literally cool their surroundings.

All of this suggests the emergence of a new social imaginary in the sense that Charles Taylor uses the term. It is altering the "ways people imagine their social existence" and their expectations from others and from society, and "the deeper normative notions and images that underlie these expectations" (Taylor 2004, 24). If Floridi's analysis is correct, then the information revolution will change the way humans imagine themselves and their expectations for how they interact with each other and with the institutions of government. The normative assumptions are altered by the relocation of humans in the moral order. Ordinary people are incorporating a new perspective into their lives. They make use of AI in everyday activities, use search engines to answer questions and gain understanding of their lives, and they even may compete in the labor market with automated systems. Their comfortable use of smart phones and social media alter the way they imagine their social environment. What the new social imaginary will be and how it will affect the sense of law's legitimacy has yet to be determined, but that it will have a profound influence seems hard to deny.

II. The Rule of Law and Social Order

With the new conceptions of the ICT in hand, let us consider Frohnen and Carey's analysis of the complexities associated with the rise of the administrative state and the challenges it poses. Their analysis begins by considering the liberal legal theory of H.L.A. Hart's *The Concept of Law* (Hart [1961] 2012). Two features of Hart's theory, order and prediction, play central roles in their reading of Hart's understanding of the rule of law. For example, they write:

> The rule of law limits the ability of willful rulers to impose their desires of the moment as commands to be followed by their subjects. It subordinates the will of particular rulers to settled forms and procedures, thereby providing citizens with knowledge of what they are required and forbidden to do. This knowledge enables people to predict official responses to their actions and plan their lives accordingly (Frohnen and Carey 2016, 22).

In Hart's understanding, law creates the order in society whereby *prediction* is possible. In this sense, the order in society is nomological (taken as true) because it is derived from law. Whereas the law might have normative foundations, it is the clarity of its semantic formulation and its authority that give structure and order to society. The social order is an achievement of human culture and will. It is predictable because it is orderly, but the order itself is an imposition into an otherwise disordered social struggle in a lawless world. Similarly, the civic republican theory of law exemplified by Michael Sandel seeks to allow judges to determine what is "simply" just. Frohnen and Carey write:

> Sandel demands that law be seen as a vehicle for justice, rather than as a normative tool for the settling of disputes. In this, the civic republicans and their juridical democracy actually develop, rather than contradict, procedural liberalism. In both cases, law is seen as a tool for rearranging society to make it more just (Frohnen and Carey 2016, 35).

Both Hart and Sandel, then, reject the morality of law itself, although they do so for somewhat different reasons.

The natural law provides an alternative account that views law as intrinsically imbued with moral meaning. It recognizes that "Law is, in an important sense, a tool for ends outside itself" (Frohnen and Carey 2016, 42). And, it is this goal-oriented aspect of law--its ability to draw into relation the law itself and the matrix of interests and concerns of human life--that makes its connection to morality undeniable and inextricable. It is indexed to morality but not an embodiment of it. It chases after moral goods, even while carrying the baggage of immoral motives and failed projects that are the stuff of human reality. As they point out, "the internal morality of law must in large measure remain a set of unwritten practices, so the proper goals of law often lie outside the scope of rules themselves" (Frohnen and Carey 2016, 48). That law's tendentious relation to morality is complexly related to other social projects and social systems is of the very nature of law in the theory that Frohnen and Carey develop, and this complexity finds empirical confirmation in the information age.

The formalization of this notion and its mathematical modeling is a part of the ICT, which supports an emerging new social imaginary.

An early example of a similar insight was stated by Niklas Luhmann, who developed a systems theory of law (Luhmann 2009). For Luhmann, social order is self-organizing. Writing in the 1980s (Luhmann 1984), he uses the term "*autopoetic*" to describe systems that self-assemble (Luhmann [1984] 2009, 81-86). The concept has developed substantially due to the rise of Big Data and the computational abilities of advanced machine learning. Today, the self-organization is a phenomenon that is observed in many natural and social settings. Examples of complex systems abound. Ants building a nest exhibit complexity, as do flocks of birds, schools of fish, neural networks in the human brain, gene expression in living organisms, economic markets, and vast social networks. These systems are characterized by agents with simple behaviors that interact in ways that are not guided by a central control authority. Their existence is well-established in many disciplines ranging from chemistry to anthropology. As formal mathematically describable social relations, they are called Complex Adaptive Systems (CAS). They are accepted as significant in understanding economics and sociology (J. Miller 2007) (J. H. Miller 2015). They enable computational ability to anticipate judicial decisions and even the evolution of rules over time. Several deployed technologies now can predict with specified degrees of accuracy the outcomes of legal disputes and forecast many developments that are social in nature. This is significant for considering the nature of law, since it suggests that law is not the cause (or at least not the entire cause) of order in society.

Nearly every area of society and every academic discipline has been influenced by these new concepts of complexity, which often require a sharp departure from conventional approaches and methodologies. Although there were antecedents to complexity science from at least the nineteenth century--and the development of fields of mathematics like complexity theory, matrix algebra, and graph theory--the origins of complexity science are often traced to scientists like Stanislaw Ulam and John von Neumann, who used early computers to examine the concept of self-replication. These studies led to the identification of complexity as a feature of some systems. John H. Miller explains:

> Complexity arises in systems of interaction agents. Take some agents with simple behavior, connect them together in a particular way, and some global behavior will result. Alter the connections and, often, new global behavior arises. Given this, knowing how patterns of interconnections— that is, networks—influence behavior is fundamental to understanding complex systems (J. H. Miller 2015).

According to this theory, the individual animals follow simple rules and are not directed by a central authority, and yet the movement of the entire group (flock or school) can be complicated, sophisticated, and nuanced. These behaviors are said to be emergent. Examples of emergence include hierarchical organization. An ant colony, for instance, might collectively build a highly organized nest structure. This might involve the gathering and processing of information by the group for the good of the group. Systems like these are dynamic, in the sense that they might change their behavior over time in reaction to information received from the environment. For example, stock prices change in unpredictable ways in response to changes in the information relevant to them. Finally, these systems display evolutionary development in the Darwinian sense of adaptation or learning.

Although complexity studies are extraordinarily interdisciplinary, mathematics plays a fundamental role in the field. For example, a researcher might consider how the adaptation of an ant colony suggests the future development of an entire city. Or, an investigation into brain activity may spawn insights into social media. The interdisciplinarity of the study has led to a multitude of interrelated disciplinary definitions of the phenomenon. Computer scientists have developed tools for exploring complex systems. Among the most powerful is virtual modeling, which allows researchers to investigate the non-deterministic behaviors of systems that gain and store information, adapt to change, and exhibit behaviors that are not reducible to the behaviors of the components. Emergence, which was discussed among philosophers as early as the mid-nineteenth century in connection with chemical compounds, has new meaning in the context of complexity theory where it is associated with other concepts that bring new questions to the old debates about emergence and ontology.

New computer technology allows for the detection and modeling of complex systems in the law. It has value to legal theories because it defines a set of features that any theory of law must now consider. This is not simply because of the persuasiveness of the reasoning. Today, the law is being analyzed in this way, from predicting the outcomes of legal matters to determining the cases that get settled or litigated by a law firm. Recently, some attention has been given by the American Academy of Arts and Sciences, which has initiated a project called Making Justice Accessible. The possibilities of using artificial intelligence to lower the cost of legal services to a point that it is affordable to the masses is gaining attention. The American Bar Association is behind this project,

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working primarily through a newly formed Center for Legal Innovation (American Bar Association n.d.). The deployment of these systems indicate some change in the nature of law and its place in society. It may be as significant a change as the development of commercial presses (which made precedent much more significant) or even the printing press itself. All of this relies on the computational nature of law, which are the parts of the legal system that can be understood through machine learning, algorithmic reduction, and conventional stochastic analysis.

That legal order can self-assemble as CAS, as Luhmann suggests (Luhmann [1993] 2004), is no longer debatable. Although it is only recently beginning to influence formal jurisprudence (Murray, Webb, and Wheatley 2018; Livermore and Rockmore 2018), machine learning is using the theory of CAS to transform the practice of law in some areas. These advanced techniques lead to a view of law that bears remarkable similarity to the Frohnen/Carey conception and suggests the durability and sophistication of their work. It seems that it can find validation in the empirical evidence that allows for the predictive analysis of law. Hart's theory makes use of "folk" understanding of law, in part because there is no more accurate social scientific understanding of law that he could rely on. But, now that the possibility of prediction has been realized, and in light of this, the belief that laws reflect the underlying social relations that give society stability has been confirmed. The rule of law involves the implementation of a system of rules that construct and are constructed by social order. Predictability results from both. Any contemporary descriptive theory of law must acknowledge these developments. And, the description developed by Frohnen and Carey is consistent with and could accommodate it.

III. Constitutionalism

"Law," as Frohnen and Carey write, "is part of a network of understandings and goals that point outside itself. A good (or bad) regime is also part of a particular kind of law—a constitution—that rests on lesser laws" (Frohnen and Carey 2016, 49). Their conception of constitutionalism, the matrix of traditions and norms on which the written Constitution draws its legitimacy and authority, is of a network of moral meanings. The goals of constitutions include mediating among moral visions for society, privileging some norms and denigrating others. They are "products of a people's culture" and embody the moral traits of the people. For good or ill, the cultural achievement of a constitutional tradition captures the moral imagination of interlocking systems.

The strategies for relating moral and amoral structures are either to impose order on them by command of centralized authority or to mediate among them, allowing them to find equilibrium. Frohnen and Carey argue that mediating constitutions are to be preferred because they allow for a more balanced and peaceful regime. They explain:

> A commanding constitution seeks to order and reorder society in keeping with a specific set of principles, such as justice, equality, and/or autonomy. A mediating constitution, on the other hand, is drawn so as to exist in equilibrium (and perhaps tension or balance, but not command) with other primary institutions and associations; it presumes and seeks to maintain a polycentric distribution of power growing from organic communities (Frohnen and Carey 2016, 78).

Here again, the description of a mediating constitution is very similar to the description of a complex system, which seeks equilibrium among forces and responds to disturbances by seeking a new equilibrium. A feature of contemporary computational law, the subfield of legal informatics that considers the aspects of law, is the awareness that complex systems are present within the law too. For example, Daniel M. Katz and Michael Bombarito have shown that complexity analysis can be useful in modeling regulation (Katz and Bombarito 2014), and J. B. Ruhl and Katz have argued for its usefulness in regulatory analysis (Ruhl and Katz 2015). That the Constitution might be described in similar language is not a surprise. Since, whatever else they are, constitutions are strategies for handling certain types of social disputes. Command constitutions are overly rigid centralized structures that seek stability at the cost of balance and become brittle and subject to fractures. An apt analogy would be to think of trying to organize a flock of birds through an authoritative leader or statement of purpose, rather than the loose rules of association that deliver a flock structure and responsiveness to the environment through which it flies. Loose rules for mediating among actors can deliver order, predictability, and the flexibility to respond to disruptive forces, external or arising from within.

The American constitutional strategy is, or was at the time of the Founding, a mediating one. The republican ideal is compatible with a dynamic system theory. It holds that the will of the masses must be moderated by representatives who are "appointed, directly or indirectly, by the people, and be reliant on the people for any continuation in office" (Frohnen and Carey 2016, 83). Representative government tries to filter the "elevated" from the base citizens, so as to deliver to public offices persons above political ambition and a plural structure to society that avoids the deadly powers of faction. The goal is not "any Olympian

group of purely public-interested statesmen" (Frohnen and Carey 2016, 85) but instead a pluralism of divergent interests achieved in a relatively small legislature that does not allow room for every viewpoint. The political processes at the local level filter the viewpoints that find expression. This point, wisely observed, is under substantial challenge today as social media and other forms of communication allow for factions to form across vast distances and without regard to borders. The formation of faction is exacerbated by the growing oceans of data on individuals that make their predilections and ambitions evident for like-minded searchers. The same type of automated systems enable a growing number of people to find their spouses, help the like-minded, and form deeply cohesive bonds within political factions. The lesson to be learned here is that technology can alter fundamental political assumptions by changing the possibilities for human social interaction and the means for decision making.

There is much more to say about the description of the constitutional plan that Frohnen and Carey develop than can be stated in a brief essay. But, the more urgent matter here is the analysis of the changes that have occurred through the Progressives that have led to the rise of quasi-law. The argument of Frohnen and Carey is insightful for assessing the impact that AI is having on democracies around the world. Turning to that theme should in no way be understood as limiting the insights of the description of law and constitutionalism to the matters covered here. There is much more, but the urgency of the AI analysis in public administration is more pressing.

IV. AI, Progressive Values, and the Rise of Quasi-Law in the Administrative State

Artificial intelligence challenges American constitutionalism by altering fundamental commitments of constitutional morality. The context for the use of AI in administrative agencies is illuminated by Frohnen and Carey's analysis that begins much earlier than some influential studies that tend to look no earlier than the New Deal (Ernst 2014, Horwitz 1992, Kalman 1999, Rodriguez and Weingast 2019). The story Frohnen and Carey tell is of the gradual recasting of American constitutionalism without changing the text of the Constitution itself. They begin their analysis of the recasting of the Constitution with J. S. Mill's essay *Considerations on Representative Government* (Mill 1861). In Mill's analysis, popular government must be reconciled with the need for expertise, and this can be achieved by "disjointing the office of control and criticism from the

actual conduct of affairs. . ." (Frohnen and Carey 2016, 124-125). He believes that for the laws to be effective and coherent over time, expertise and experience are necessary. He suggests that a council of experts could draft laws to be approved by the Parliament, and this would "render government 'fit for a high state of civilization.'" It would promote virtue and organize the moral actions of the people (Frohnen and Carey 2016, 124). In this way, the common good sought by a community can be pursued despite the tendency of democracies to dissolve into the pursuit of individual interests though factional groups.

Frohnen and Carey continue their examination of the historical evolution of American constitutionalism with a discussion of Woodrow Wilson's argument to expand the administrative function of the state in his 1887 essay "The Study of Administration" (Frohnen and Carey 2016, 129-134). Wilson advocates for a science of administration because the governmental concerns of the nation had grown complex and numerous. The new science would straighten things out with expertise far beyond what an elected official could reasonably hope to have. Wilson is confident in the reason of experts to sort out the complexities of society apart from the resources that tradition might hold. This would be a hallmark aspiration of the Progressive era, to free the "bulk of the masses" who lack philosophical sophistication from tradition's ostensible dogmatism and irrationality. This stands in stark contrast to the original understanding of the Constitution, which envisioned multiple and overlapping authorities. The hegemony of elite, expert administrators with specialized knowledge and experience was driven by the desire to displace the ignorance of the unsophisticated masses with a bureaucracy that, while responsive to the public, can manage even the public will with scientific precision. There is much more detail in their story of the development of the Progressive Program than can be considered here. They include Frank Goodnow, Herbert Croly, and Pendleton Herring (Frohnen and Carey 2016, 134-150). Each contributed to the New Deal transformation of the presidency that was achieved by the Roosevelt administration and the radical change in the Senate brought about by the Seventeenth Amendment, which provided for the direct election of senators (Frohnen and Carey 2016, 163). Furthermore, Congress has also been complicit by abdicating its role, central for the Framers, in creating federal law. The temptation to delay or avoid the politically challenging work of compromise and negotiation proves to be overwhelming, and thus the Congress becomes inactive. The democratic processes by which a modicum of consensus about the common goods to be pursued in society depend on

politicians who seek to find the consensus. What has occurred is a tacit agreement to avoid the hard work of politics by creating procedural devices like omnibus bills that have the effect of shifting the political consequences to the president, who must inevitably use "waivers, budgetary and interpretive gamesmanship, and signing statements to in effect veto portions of bills" (Frohnen and Carey 2016, 187) that contribute to the aggrandizement of the executive branch.

For the purposes here, the changes in the rule of law are particularly important. Frohnen and Carey describe the development of the consensus that law is fundamentally a social construct or an expression of politics that has moved the nation towards a rule of law of limited enduring legitimacy, one which is unpredictable and inconsistent. The result is the rise of what Frohnen and Carey call quasi-law, which are legislative enactments designed to authorize powerful bureaucrats. They summarize their view this way:

> Quasi-laws in our administrative state frequently lack clarity, leaving broad discretion to powerful government officials to act as they will. While particular quasi-laws generally do not require contradictory actions, the overall requirements of our administrative state often point in contradictory, confusing, and delegitimizing directions—as when some laws subsidize tobacco farming and others authorize spending to discourage smoking. Our quasi-laws fail to remain relatively constant over time. Finally, our quasi-laws, complete with waivers and other provisions involving vast amounts of discretion, often are administered in a manner that differs wildly from that in which they are declared. Emanating from areas throughout our political structure, granting rights and imposing duties, these quasi-laws bind us but do not provide us with the certainty necessary for a free society (Frohnen and Carey 2016, 186).

The result is the rise, in many instances, of excessive executive power. The rise of the "unitary executive," which began with the Bush II era and is finding its greatest expression with the Trump presidency, is granting the executive the privilege to declare what Carl Schmitt (Schmitt 1922) called a "state of exception," in which the distinction between lawful and unlawful—between law and violence—is blurred. This is the quasi-law that Frohnen and Carey warn against. It has the potential to create a tyranny of bureaucracy not only through its destruction of the rule of law, but also by abandoning the political commitment to shared goals and pursuits. They are particularly concerned that we might lose any conception of a common good that is more robust and unitive than economic efficiency and wealth maximization.

Today, the concept of quasi-law must be applied to the automation practices of various types of institutions of public administration, which

use vast amounts of government data and employ advanced machine learning in order to automate processes for routine decision making. This use of AI by public administrators is growing and will likely accelerate as even more data become available and the computation techniques become more sophisticated. Consider two examples:

- In a recent case, *State v. Loomis*, 881 N.W, 2d 749 (Wis. 2016), the Supreme Court of Wisconsin upheld a lower court opinion that allowed the use of an automated system that recommended sentences, even though the precise nature of the algorithm was not known either by the court or the defendant. Allegations of bias in the data and overreliance by the trial court judge in an automated system were swept aside by the court, which did not find that understanding the basis for a sentencing decision was necessary for the court or the defendant.

- A substantial analysis of the use of Machine Learning by administrative agencies is described in this recent proposal by two law professors from the University of Pennsylvania in a journal article:

    To translate these embedded machine-learning techniques to possible rulemaking applications, consider how the Occupational Safety and Health Administration (OSHA) might proceed if it were to create an automated process for determining whether to implement a new workplace safety regulation. OSHA could implement an algorithm in which the modeled agents are the employers being regulated. The environment in which these agents operate would include mathematically-specified factors capable of influencing agent behavior, including a possible regulation. The employer-agents in the model would "observe" the environment, which would include different regulatory alternatives (including an environment with no regulation), and then "take" actions, such as complying with the regulation, to reach their own goals, perhaps defined as profit maximization. Now, although OSHA would like to use this agent-based model to see how employers respond to the potential new regulation and, consequently, what effects the regulation may have, OSHA does not know a priori how employers will decide to respond to any regulation. The agent-based model would therefore use a machine-learning technique to select employers' optimal responses to the regulation given their profit maximization goal (Coglianese and Lehr 2017, 1174).

There are many other examples. These two illustrate some salient features of applying AI in public administration. First, while the computers themselves may be reliable predictors of legally significant outcomes, their application by human actors may not be. This seems especially disturbing when the workings of the AI are not known. This is not simply

a matter of negligence in oversight. In machine learning, opacity in the AI may be a feature of its operation. The veiling of the decision-making process is fundamental to the way some AI techniques work. The layers of simulated neural networks that are chacteristic of Machine Learning cannot be pulled apart, as it were; they must be taken as a whole, and therefore the valences between and among them are hidden. And thus, the AI represents a particularly troublesome form of quasi-law if it is making substantive decisions as it was in *Loomis*.

The OSHA example presents another feature of AI; it must be optimized for some goal. The values are determined for expression by the training of the system. In an almost child-like way, a machine learning program is taught to accept some outcomes as positive and some as negative. During training, the outcomes that will receive positive reenforcement must be determined in some way. In the OSHA example, the value selected for maximal expression is economic utility. The regulatory goal is maximal profit. As AI takes on greater responsibilities, the optimization goals must be carefully selected. But, as Frohnen and Carey indicate, the political work that should be done in achieving agreement as to common goods is not likely to develop in selecting AI goals. It is not even clear who might be tasked with determining the appropriate goals. Would it be the secretary of the agency? The president? The manufacturer? The programmer? Clearly there is much at stake, and in developing and deploying such systems, some thought should be given to determining the moral values emphasized for maximal expression. Economic efficiency plays a significant role in the United States. The current strategic plan issued by the White House calls for a free-market approach. Limited regulation and the encouragement of entrepreneurial development will be the goal of the system. This approach seems directly contrary to what the IEEE intends in its report. An Aristotelian conception of the good that a community seeks together is much closer to the vision of the Founders than a neoliberal state that seeks only the aggregate of individual goods through the abstract concept of wealth.

To be sure, there are also positive potential benefits from AI. Although the inference pattern that leads a machine learning program to make a decision may be veiled from view and reach surprising conclusions, the conclusion will not be arbitrary. They will become predictable when they repeat over time. And they will achieve whatever end they are taught to achieve. Additionally, while it will reflect the biases of the data and of the trainer, if this bias can be corrected, it might help make decisions fairer and more neutral. For example, it can help decision

makers detect their own biases and make adjustments. If developed properly, this could contribute to making quasi-law more consistent and predictable by disempowering bureaucrats while continuing to encourage expert decisions.

Conclusion

The goal of this essay is to call attention to the choices and future possibilities for American democracy as it is subsumed in the interconnected webs of networked computer systems. It has made use of the masterful analysis of Frohnen and Carey, whose work illuminates the dynamics of the evolving American constitutionalism. This essay suggests that a new social imaginary is emerging that will confront the core beliefs and moral meanings that have guided the nation since the founding. Even though the constitutionalism of the nation has evolved over time, the nation has retained contact with the ideas and beliefs of modernity. It has, for example, still viewed government as the central locus for social organization. But, today, the sense of the information revolution is penetrating into commonplace awareness in ways that are unprecedented in the sweeping scope of foundational commitments. From the place of the human as an informational entity to the expectations of social interaction through communications devices, to the nature of law, to the expectations of government, all are being transformed in a short period of revolutionary change. Fundamentally, it seems, law can no longer be viewed solely as a cultural/linguistic construction for social control. There is a complex hermeneutic circle that unites law and underlying social relations. And these relations have an independence from culture.

A new philosophy of law that accounts for the reality of enduring information structures is needed (Lee 2017). The possibility that the new technologies are creating a new social imaginary is supported by the new ways of understanding that are coming into common awareness. They provide profound opportunities and pose challenges to the traditions and assumptions already challenged by earlier versions of modernity. But the new awareness is different from what existed in the twentieth century. The new social imaginary calls for a return to virtue ethics and teleological perspectives on the common good. And in this historic moment, a call for a return to virtue is heard among the technologists who are most concerned with the moral meaning of their work. In the words of Shannon Vallor, in her recent book, *Technology and the Virtues*:

> Moral expertise thus entails a kind of knowledge extending well beyond a cognitive grasp of rules and principles to include emotional and social in-

telligence: keen awareness of the motivations, feelings, beliefs, and desires of others; a sensitivity to the morally salient features of particular situations; and a creative knack for devising appropriate practical responses to those situations, especially where they involve novel or dynamically unstable circumstances (Vallor 2016, 26).

It seems likely that a new social imaginary will come. It is heartening to think that it might be accompanied by a renewal of moral reasoning, more concern with moral purposes, and a greater sensitivity to the ways that politics can encourage common goods that are pursued by a noble and wise nation.

Works Cited

American Bar Association. 2019. *Center for Innovation.* Accessed April 9, 2019. https://www.americanbar.org/groups/centers_commissions/center-for-innovation/.

Aristotle. *Nicomachean Ethics*. The Complete Works of Aristotle, 1996. Edited by Jonathan Barnes. Vol. II. Princeton, New Jersey: Princeton University Press.

Aristotle. *The Politics*. The Complete Works of Aristotle. 1996. Edited by Jonathan Barnes. Vol. II. Princeton, New Jersey: Princeton University Press.

Coglianese, Cary, and David Lehr. 2017. "Regulating by Robot: Administrative Decision Making in the Machine-Learning Era." *Georgetown Law Review* 107: 1147.

Ernst, Daniel R. 2014. *Tocqueville's Nightmare: The Administrative State Emerges in America, 1900-1940.* Oxford: Oxford University Press.

Floridi, Luciano. 2013. *The Ethics of Information.* Oxford: Oxford University Press.

—. 2011. *The Philosophy of Information.* Oxford: Oxford University Press.

Frohnen, Bruce, and George Carey. 2016. *Constitutional Morality and the Rise of Quasi-Law.* Cambridge: Harvard University Press.

Hart, Herbert Lionel Adolphus. 2012. *The Concept of Law.* Oxford: Oxford University Press.

Horwitz, Morton. 1992. *The Transformation of American Law 1870-1940.* Oxford: Oxford University Press.

IEEE. 2019. *Ethically Aligned Design.*

Kalman, Laura. 1999. "Law, Politics and the New Deal(s)." *Yale Law Journal* 108: 2165.

Katz, Daniel M., and Michael Bombarito. 2014. "Measuring the Com-

plexity of the Law: The United States Code." *Artificial Intelligence and Law* 22: 337.

Lee, Kevin P. 2017. "A Preface to the Philosophy of Legal Information." *SMU Science and Technology Law Review* 20: 277-340.

Livermore, Michael A., and Daniel N. Rockmore. 2018. *Law as Data: Computation, Text, & the Future of Legal Analysis.* Santa Fe: Santa Fe Institute of Science.

Luhmann, Niklas. 2009. *Law as a Social System.* Oxford: Oxford Univeristy Press.

Mill, John Stuart. 1861. "Consideration on Representative Governance." *Project Guttenberg.* Accessed April 10, 2019. https://www.gutenberg.org/files/5669/5669-h/5669-h.htm.

Miller, John. 2007. *Complex Adaptive Systems.* Princeton: Princeton University Press.

Miller, John H. 2015. *A Crude Look at the Whole.* New York: Basic Books.

Murray, Jamie, Thomas E. Webb, and Steven Wheatley. 2018. *Complexity Theory and Law: Mapping and Emergent Jurisprudence.* New York: Routledge.

Rodriguez, Daniel B., and Barry R. Weingast. 2019. "Engineering the Modern Administrative State, Part I: Political Accomodation and Legal Strategy in the New Deal Era." *Northwestern Public Law Research Paper No. 19-03.* February 15. Accessed April 2019. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3335114.

Ruhl, J.B., and Daniel M. Katz. n.d. "Measuring, Monitoring, and Managing Legal Complexity." *Iowa Law Review* 101 (191).

Shannon, Claude E., and Warren Weaver. 1998. *The Mathematical Theory of Communication.* Bloomington: University of Indiana Press.

Taylor, Charles. 2004. *Modern Social Imaginaries.* Durham: Duke University Press .

Turing, Alan. 1936-1937. "On computable numbers, with an application to the Entscheidungs problem." *Proceedings of the London Mathematical Society* 230-265.

Vallor, Shannon. 2016. *Technology and the Virtues, A Philosophical Guide to a Future Worth Wanting.* Oxford: Oxford University Press.

Weaver, Warren. 1948. "Science and Complexity." *American Scientist* 36: 536-544.