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SEEING (PLATFORMS) LIKE A STATE: DIGITAL LEGIBILITY AND LESSONS FOR PLATFORM GOVERNANCE

Neil Chilson[*]

ABSTRACT

The growing backlash against Big Tech companies is a symptom of digital technology increasing the **legibility** of the world. New tools of sensing and

computing have simplified the collection and analysis of information about humanity and the world around us and made it more understandable. This increased legibility is driving concerns about privacy, manipulation, obsolescence, and misinformation.

How did governments adjust to past rapid increases in legibility? Yale anthropologist James C. Scott's book, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, explores this question in depth and provides insights for how governments and companies should respond today.[1]

Scott argues that the success of the Industrial Revolution motivated a "high modernism" mindset in government, with state leaders seeking to fundamentally reshape and improve society.[2] To pursue such ambitious tasks governments needed a society that was legible, often achieved by eliminating important complexities and ignoring local knowledge.[3] Scott argues that when "schemes to improve the human condition" include characteristics of imposed legibility, a high-modernist mindset, strong central control, and weak social or political constraints, they are doomed to fail, sometimes in horrific ways.[4]

To avoid such outcomes, Scott's work suggests four lessons for anyone who would intervene in complex systems: (1) minimize simplistic legibility; (2) temper ambitious plans with prudence and humility; (3) reduce the planner's ability to impose a plan; and (4) increase the ability of participants to resist or shape such plans.[5]

As governments and tech platforms seek to address the concerns driving the "techlash," these lessons provide guidance on how to avoid the worst pitfalls that could adversely affect efforts to improve the human condition online.[6]

INTRODUCTION

Big Tech platforms are facing a backlash of angry rhetoric and government action.[7] Such companies handle enormous volumes of speech and

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[1]   JAMES C. SCOTT, SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN CONDITION HAVE FAILED 2 (Yale Univ. Press, 1998).

[2]   *Id*. at 4–5.

[3]   *Id*. at 6.

[4]   *Id*. at 4.

[5]   *Id*. at 4–5.

[6]   Robert D. Atkinson et al., *A Policymaker's Guide to 'Techlash'—What It Is and Why It's a Threat to Growth and Progress*, INFO. TECH. & INNOVATION FOUND. (Oct. 28, 2019), https://itif.org/publications/2019/10/28/policymakers-guide-techlash.

[7]   Clara Hendrickson & William A. Galston, *Big Tech Threats: Making Sense of the Backlash Against Online Platforms*, BROOKINGS INST. (May 28, 2019), https://www.brookings.edu/research/big-tech-threats-making-sense-of-the-backlash-against-

communications for billions of people worldwide.[8] The systems they design and the rules they set and enforce, therefore, have significant consequences for individuals and the public. Just five years ago, media and political sentiment for Big Tech was overwhelmingly positive and focused on the massive benefits, realized and potential, that these companies could offer.[9] Today, that sentiment has changed: These companies stand accused of a wide range of problems, from invading privacy and causing addiction, to even enabling election manipulation.[10] Regulators are investigating and suing these companies, while legislators are proposing new laws targeting Big Tech.[11] This "techlash," perhaps most prominent in the United States and Europe, exists around the world.[12]

What concerns drive the "techlash" and what should platforms and governments do to address them? In this paper I argue that the "techlash" is a symptom of digital technology increasing the *legibility* of the world. New tools of sensing and computing have simplified the collection and analysis of information about us and the world around us. They have made the world more readable.

Society previously experienced periods of rapid legibility increases. Today's tools of digital legibility continue a long tradition of tools that increase the legibility of the world and thus our ability to understand and manipulate it. For example, tools like the microscope or x-ray machine were revolutionary because they accessed previously inaccessible information.[13] Scientists used this new information to better understand the world. Doctors, inventors, and engineers used it to solve practical problems. This applied understanding of the world led to vast increases in progress and prosperity.

How did governments react to past increases in legibility? Yale anthropologist James C. Scott's book *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* explores this question

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online-platforms/.

   8   *The Myth of Social Media*, GALLUP, https://online.wsj.com/public/resources/documents/sac_report_11_socialmedia_061114.pdf (last visited May 5, 2021).

   9   Bijan Stephen, *How Black Lives Matters Uses Social Media to Fight the Power*, WIRED (Nov. 2015), https://www.wired.com/2015/10/how-black-lives-matter-uses-social-media-to-fight-the-power/.

   10   Casey Newton, *New Legislation is Putting Social Networks in the Crosshairs*, VERGE (Aug. 1, 2019), https://www.theverge.com/2019/8/1/20749517/social-network-legislation-hawley-privacy-research.

   11   *Id.*

   12   Atkinson, s*upra* note 6.

   13   Laura Poppick, *Let Us Now Praise the Invention of the Microscope*, SMITHSONIAN MAG. (Mar. 30, 2017), https://www.smithsonianmag.com/science-nature/what-we-owe-to-the-invention-microscope-180962725/; *Disruptive Technology 1890s-style: the Impact of the X-ray*, PHILIPS (Nov. 6, 2015), https://medium.com/@Philips/disruptive-technology-1890s-style-the-impact-of-the-x-ray-3cc1c4e5ff0a.

in depth and provides guidance for how governments and companies should respond today.[14] Scott argues that the success of the Industrial Revolution—which was driven by legibility-increasing scientific discoveries—motivated a "high modernist" mindset.[15] This mindset tasked governments with fundamentally reshaping and improving society.[16] To pursue such ambitious tasks, governments needed society to be legible, and often imposed such legibility—usually by eliminating important complexities and ignoring local knowledge.[17]

State-imposed legibility has unintended consequences.[18] Scott argues that "schemes to improve the human condition" include characteristics of imposed legibility, a high-modernist mindset, strong central control, and weak social or political constraints, they are doomed to fail, sometimes in horrific ways.[19]

To avoid such outcomes, his work suggests four lessons for those who would intervene in complex systems: (1) minimize simplistic legibility; (2) temper ambitious plans with prudence and humility; (3) reduce the planner's ability to impose a plan; and (4) increase the ability of participants to resist or shape such plans.[20]

In today's world of increased and increasing legibility, governments and tech platforms should heed these lessons. As governments and tech platforms seek to address the concerns driving the techlash, these lessons provide guidance on how to avoid the worst side effects and failures that can befall schemes to improve the human condition online.

I. WHY *SEEING LIKE A STATE*?

In order to navigate this topic efficiently, I must provide a quick summary of my roadmap: Yale Sterling Professor of Political Science James C. Scott's groundbreaking work, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* ("*SLAS*").[21] Published in 1998, *SLAS* describes how governments throughout history attempted to understand the people and lands they governed.[22] It argues that the limits of this understanding combined with other elements doomed many ambitious and often well-

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[14]   SCOTT, *supra* note 1, at 2.
[15]   *Id*. at 4.
[16]   *Id*.
[17]   *Id*. at 2.
[18]   *Id*.
[19]   *Id*. at 4–6.
[20]   *Id*. at 4–5.
[21]   *See generally id*.
[22]   *Id*. at 1–2, 6.

meaning government programs to catastrophic failure.[23]

Scott identifies four characteristics common to the failed government efforts that he studied.[24] First, government develops a simplified model of the complex system it wants to change, increasing its legibility but losing important knowledge.[25] Second, the project leadership has a "high modernism" mindset that sets out ambitious plans for redesigning the system.[26] Third, the leadership has sufficiently comprehensive authority to be able to mandate the adoption of these plans.[27] And finally, the civil society involved is too weak to overtly resist the imposition of the plans.[28]

Why is Scott's analysis of failed government programs a good guide for understanding tech platform governance? I can think of at least three reasons.

First and most directly, *SLAS* explores the limits of what governments can accomplish when regulating or even understanding complex systems.[29] Online platforms and the internet more generally are highly complex systems.[30] Thus, *SLAS* has insights for policy makers as they think about how to understand and regulate in this space.

Second, *SLAS* has lessons for companies, too; many claim that the biggest consumer-facing platforms, with billions of users, are similar to governments.[31] This comparison has significant limits—the most important being that these platforms lack a monopoly on legitimate force, meaning that actual governments can still impose rules on them.[32] Still, platforms share the third characteristic that Scott discusses: platforms have a lot of authority over the systems they operate.[33] They possess a high degree of control over the design of the applications and services they offer to users.[34] Indeed, their technical ability to design the entirety of the user environment surpasses the

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[23]   *Id*. at 4.

[24]   *Id*.

[25]   *Id*.

[26]   *Id*.

[27]   *Id*. at 5.

[28]   *Id*.

[29]   *Id*. at 2 ("In each case, officials took exceptionally complex, illegible, and local social practices, such as land tenure customs or naming customs, and created a standard grid whereby it could be centrally recorded and monitored.").

[30]   Kihong Park, *The Internet as a Complex System,* PURDUE UNIV. (2005), https://www.cs.purdue.edu/nsl/complex.pdf.

[31]   *See* Winston Hearn, *Seeing Like a Tech Company,* WINSTON THE THIRD (Aug. 12, 2020), https://www.winstonhearn.com/wrote/2020/seeing-like-a-tech-company/.

[32]   *Id.*; *see also* Chris Hoofnagle, Symposium, *Seeing Like A Platform,* BCLT/BTLJ (Apr. 2019), https://hoofnagle.berkeley.edu/wp-content/uploads/2019/04/hoofnagle_bltj_2019_seeing.pdf.

[33]   *See* Hearn, *supra* note 31 (noting that big tech platforms are like quasi-states in that they are "wielding immense power, not simply over individuals, but also over the shape of human culture at large.").

[34]   *Id*.

ability of even totalitarian governments to modify the physical or social environment of their subjects.[35] Practically speaking, and in part because of the lack of a monopoly of force, platforms face many constraints that authoritarian governments do not: investor influence, user feedback, local laws, market forces, etc.[36] Still, platforms' high levels of control over their users' environments means that platforms could benefit from *SLAS*'s lessons about the challenges of executing ambitious plans over large populations.[37]

The third reason *SLAS* applies to platforms is related to the second. *SLAS* is not just a critical review of ambitious government projects.[38] At its core, *SLAS* is about how such ambitious projects are facilitated or frustrated by information, information collection, and limits to information collection.[39] *SLAS* focuses on government projects, but many tech companies' projects rely heavily on information collection.[40] *SLAS*'s lessons about the limits of information collection apply to these companies' strategies.[41]

It is true that the consequences of the failures in *SLAS* are of a different scale. Scott describes some of the most tragic humanitarian disasters of the last century, caused by grand government projects,[42] whereas I am talking about potential failures by creators of websites and mobile apps. Still, even if the stakes are lower than preventing humanitarian disasters, they can still be high. Mistakes in Facebook's newsfeed decisions are unlikely to cause suffering on the level of, say, Soviet forced relocation. But they are important to civil discourse, news reporting, and our democracy.[43] So, I believe the lessons of

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[35] *Id*.

[36] *Id*.

[37] Issie Lapowsky, *How Facebook's Oversight Board Could Rewrite the Rules of the Entire Internet*, PROTOCOL (May 6, 2020), https://www.protocol.com/facebook-oversight-board-rules-of-the-internet.

[38] Hearn, *supra* note 31 (noting that Scott's book "is interested in these processes that happen from the top down, states defining their goals and using power to force upon the populace changes that are intended 'for their benefit' but ultimately fail and lead to great human suffering. . . . I couldn't help but see terrifying parallels to the modern tech industry.").

[39] SCOTT, *supra* note 1, at 2 ("I began to see legibility as a central problem in statecraft.").

[40] *See* Aliza Vigderman & Gabe Turner, *The Data Big Tech Companies Have on You*, SECURITY.ORG (Oct. 27, 2020), https://www.security.org/resources/data-tech-companies-have/ (remarking on how much data companies have at their disposal from their services).

[41] *See* Kevin Granville, *Facebook and Cambridge Analytica: What You Need to Know as Fallout Widens*, N.Y. TIMES (Mar. 19, 2018), https://www.nytimes.com/2018/03/19/technology/facebook-cambridge-analytica-explained.html (explaining how Facebook used collected information that was provided to Cambridge Analytica and subsequently used to potentially influence voters in the United States election of 2016).

[42] SCOTT, *supra* note 1, at 3.

[43] Kate Klonick, *The New Governors: The People, Rules, and Processes Governing*

SLAS remain relevant.

The remainder of the article will proceed as follows: first, the remainder of this introduction describes what I (building on Scott) mean by legibility. Section II explains how information technology is making the world more legible. Section III lists and discusses four concerns motivated by this increased legibility. Section IV distills from *SLAS's* four lessons for governance in this new environment. And Section V walks through an example of applying those lessons to a technology policy question. Finally, Section VI concludes.

II.   WHAT IS 'LEGIBILITY'?

Because I will be using the term so much, it is worth digging into what I mean by the word "legible."[44] Like Scott, I mean approximately the dictionary definition of legible: "capable of being read," where "read" is interpreted very broadly to mean "able to gather information from."[45] For example, a thermometer outside my kitchen window would make the outdoor temperature legible to me. As the title of Scott's book suggests, he focuses on what is legible *to the state*.[46] I will apply the same term but more broadly consistent with and even implied by Scott's work.

A few relevant characteristics of legibility as Scott uses the term:

Legibility is subjective. Something that is perfectly legible to one can be illegible to another.[47] For example, a village's unique weights and measures, used successfully every day by local farmers and merchants, might be useless to central government administrators, unless they can convert it into familiar units.[48] Language may be the prototypical example of a complex system that can be perfectly legible to one person while incomprehensible to another.[49] In the digital world, encryption can limit legibility to certain parties. But even unencrypted information, such as session tracking cookies, might be available to many parties but understandable to only a few.[50]

Legibility can be imposed. Building on this idea of subjectivity, Scott provides many examples of central authorities' efforts to clarify, for their

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Online Speech, 131 HARV. L. REV. 1598, 1603 (2018).

[44]   *See generally* SCOTT, *supra* note 1, at 2.

[45]   *Legible*, MERRIAM-WEBSTER ONLINE DICTIONARY (Feb. 11, 2021), http://www.merriam-webster.com.

[46]   SCOTT, *supra* note 1, at 2.

[47]   *Id*. at 24.

[48]   *Id*.

[49]   *Id*. at 72–73.

[50]   *The Internet and Data Privacy: What Is Collected, How to Opt-Out of Cookies and Disable Data Collection*, SECURITY.ORG (July 16, 2020), https://www.security.org/digital-safety/data-privacy/.

purposes, matters that locals do not need clarified.[51] Such examples include standardized weights and measures, mandatory surnames, property surveys and population registers, scientific agriculture, and design of cities.[52] The internet is protocol layer upon protocol layer of imposed legibility, although here the better descriptor might be designed legibility; there was no pre-existing local ordering replaced by, say, Transmission Control Protocol/Internet Protocol.[53]

Imposed legibility has a purpose. When a state imposes legibility, it does so in pursuit of a specific objective: easing tax collection; maximizing crops; or streamlining military transportation.[54] Often states impose legibility to assemble a summarized, synoptic view to guide interventions.[55] Scott describes such efforts to make things "more legible—and hence manipulable—from above and from the center."[56]

Legibility simplifies. Even though legibility can be imposed, when it is imposed for a purpose it necessarily is a simplification that fails to fully capture the local knowledge it summarizes.[57] Scott describes tools of legibility as "rather like abridged maps [that] did not successfully represent the activity of the society they depicted, nor were they intended to; they represented only that slice of it that interested the official observer."[58] Scott uses the term *mētis* to describe one type of information discarded when states impose legibility on a complex system.[59] This Greek word denotes knowledge that can only be obtained from practical experience.[60] Simple examples include riding a bike or sailing a boat. More complex examples include the "soft skills" of international diplomacy or leading a company.[61] This type of knowledge is very specific to an activity. Often, it is not even fully legible to the practitioner—they can't explain to another person precisely how to do what they have done.[62] Because *mētis* is not fully legible even to those who possess it, it cannot be captured when states seek to make a complex system legible.[63] And often, those imposing legibility make the mistake of regarding *mētis* as useless noise or

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[51]   *See* SCOTT, *supra* note 1, at 2.
[52]   *See id*. at 2.
[53]   Park, *supra* note 30, at 1.
[54]   SCOTT, *supra* note 1, at 5.
[55]   *Id*. at 352.
[56]   *Id*. at 2.
[57]   *Id*. at 11.
[58]   *Id*. at 3.
[59]   *Id*. at 6.
[60]   *Id*.
[61]   *Id*. at 22.
[62]   *Id*. at 3.
[63]   *Id*.

disorder when it actually represents complexity.[64]

Legibility and ambition feed each other. As Scott describes, instruments of imposed legibility such as censuses, surveys, and population registers have long been the basic tools of statecraft.[65] As the state gathers information, even simplified information, it can more precisely and effectively deliver services and pursue its mandates.[66] But as its mandates and purposes grow so too does its need for information and thus its need for increased legibility.[67] In some cases, when a state imposes legibility, it may disrupt a local community and therefore increase the need for the centralized authority to intervene.[68]

Scott focuses on state-imposed legibility, but there are other methods for increasing legibility. Consider the microscope. Its invention opened a new territory for exploration—it made legible a tiny, previously invisible domain.[69] Other legibility-increasing tools include the sundial, the metronome, the clock, the compass, the scale, the barometer, the stethoscope, and the x-ray—and more recently, the video camera and the microphone.[70] "Discovered" legibility differs from imposed legibility because it does not change the observed system (except, perhaps for observations at the quantum level).[71]

This type of discovered legibility has been a major driver of scientific and technical progress.[72] Once new tools of increased legibility make information legible, people can apply logic and scientific methods to this newly legible information to generate new hypothesis and theories and to solve practical problems.[73]

Scott does not expressly talk about this "discovered" legibility, but his work documents how the increases in scientific legibility during the Industrial Age

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[64]   *Id*. at 356–57.

[65]   *Id*. at 70–71.

[66]   *Id*. at 29.

[67]   *Id*. at 6.

[68]   *Id*. at 73.

[69]   *See* Liz Logan, *Early Microscopes Revealed a New World of Tiny Living Things*, SMITHSONIAN MAG. (Apr. 27, 2016), https://www.smithsonianmag.com/science-nature/early-microscopes-revealed-new-world-tiny-living-things-180958912/; *see also Antonie van Leeuwenhoek (1632-1723),* BBC (2014), http://www.bbc.co.uk/history/historic_figures/van_leeuwenhoek_antonie.shtml (highlighting the life of the seventeenth-century Dutch citizen who popularized the microscope despite having no formal scientific education through descriptions of bacteria that he observed after making his own lenses to examine fabrics in his drapery shop. The British Royal Society initially doubted his discovery as previous lenses and microscopes could not view organisms as small as bacteria).

[70]   *See Measurement*, ENCYCLOPEDIA BRITANNICA (Feb. 4 2020), https://www.britannica.com/technology/measurement.

[71]   SCOTT, *supra* note 1, at 24.

[72]   *Id*. at 4.

[73]   *Id*. at 11.

heavily influenced governments and governance.[74] Specifically, Scott argues that the wild success of the Industrial Age inspired intellectuals in the nineteenth and early-twentieth century to favor dramatically expanding the role of the government.[75]

In the mid-nineteenth century, intellectuals began aspiring to administratively reorder nature and society.[76] Scott calls this mindset "high modernism."[77] "Modernism" refers to adherents' wishes to emulate the success of the ongoing Industrial Revolution.[78] To them, the Industrial Revolution demonstrated the near limitless potential of scientific and technical expertise to solve practical problems—including, they thought, all kinds of social problems.[79] "High" refers to the lofty ambition of these intellectuals.[80] For most of human history, the state's goals were modest: extract taxes, repel invaders, quell rebellion.[81] The concept that the state should seek to improve the well-being of society was a novel one.[82] High-modernist plans were not incremental or subtle; they disdained history and often they sought to wipe out previous approaches and replace them with wholly re-engineered solutions.[83]

High-modernist governments sought "the rational design of social order commensurate with the scientific understanding of natural laws."[84] Science solved practical problems using information discovered through tools like the microscope; high-modernist governments sought to solve governance problems using information gathered through state tools of imposed legibility.[85]

But Scott is careful to distinguish high modernism from scientific practice, noting:

> It was fundamentally, as the term 'ideology' implies, a faith that borrowed, as it were, the legitimacy of science and technology. It was, accordingly, uncritical, unskeptical, and thus unscientifically optimistic about the possibilities for the comprehensive planning of human settlement and production.[86]

This enthusiasm for a broad scope of government and confidence in the

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74   *Id*. at 354.
75   *Id.* at 4–5.
76   *Id*. at 4.
77   *Id*.
78   *Id*.
79   *Id*.
80   *Id*. at 4–5.
81   *Id*. at 2.
82   *Id*. at 2–3.
83   *Id*. at 5.
84   *Id*. at 4.
85   *Id*.
86   *Id*.

ability of experts to shape society was common to individuals and groups that otherwise disagreed entirely on what society should look like.[87] It found its most abhorrent and tragic expressions in Nazi Germany and Stalinist Russia, but also undergirded more successful efforts such as Woodrow Wilson's expansion of federal administrative agencies in the US.[88]

III. INFORMATION TECHNOLOGY HAS RAPIDLY INCREASED THE SPEED AT WHICH THE WORLD IS BECOMING MORE LEGIBLE

Like the Industrial Age, we are in a new era of rapidly increasing legibility. This is due primarily to information technology, which has increased the legibility of the world in four ways.[89] Understanding these four ways matters to governing technology, because each type of increased legibility raises different policy concerns.[90]

First, we conduct more of our interactions in the highly legible online environment.[91] Cyberspace is perhaps the most comprehensive and heavily used example of imposed legibility in human history.[92] The entire environment was designed. It is an information environment where legibility is the point (legibility to *whom* is an important question, however.).[93] Though the internet has evolved over time, the core protocols remain highly legible.[94] The basic protocols underlying the internet were built to relay information across servers that are owned and used by many different organizations and people.[95] This requires information to be observed—and not just by the party to whom it is addressed.

How does online legibility compare to the offline world? The online world is complex, but it remains much simpler than the offline world and thus contains less total information. But unlike the offline world, nearly all information online can be observed, collected, and analyzed relatively easily.[96]

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[87]   *See id.*

[88]   *See id.* at 5.

[89]   *Id.*

[90]   *See id.* at 4.

[91]   Paresh Dave, *Zuckerberg Says Facebook's Future is Going Big on Private Chats*, REUTERS (Mar. 6, 2019), https://www.reuters.com/article/us-facebook-zuckerberg/zuckerberg-says-facebooks-future-is-going-big-on-private-chats-idUSKCN1QN2JR.

[92]   *See* Manuel Castells, *The Impact of the Internet on Society: A Global Perspective*, MIT TECH. REV. (Sept. 8, 2014), https://www.technologyreview.com/2014/09/08/171458/the-impact-of-the-internet-on-society-a-global-perspective/.

[93]   *See id.*

[94]   *Id.*

[95]   *See* Park, *supra* note 30, at 2 (describing the Internet as a complex system unique in the fact that it is a "melting pot" and a "man-made many-body system.").

[96]   *See* John Brownlee, *Here's What Websites Know About You, Just From the Way You Browse*, FAST COMPANY (Nov. 22, 2016), https://www.fastcompany.com/3065894/heres-

When you browse an online store, the computers hosting that website know in detail how you interacted with the website.[97] Logging and analyzing those interactions is a straightforward process.[98] Compare that to the local grocery store, where such data could theoretically be gathered but is unavailable without substantial additional effort. For these reasons, the online world has achieved a level of legibility that surpasses any previous environment where humans regularly interact.[99] As people do more of their daily transactions, work, and entertainment in an online environment, the percentage of their daily lives that becomes legible increases.[100]

Although they may not use the word "legible," countless others have observed that more information is collectable in the online world than offline.[101] Often this is framed as a problem to be fixed. But the internet, like the microscope and other tools before it, offers access to more information. Whether this additional information is a "problem" depends on how it is used.

The second way that technology increases legibility is through new sensor technologies.[102] Technologies such as camera phones and internet connected appliances are digitizing ever greater portions of the physical world, increasing the legibility of our lives.[103] In 2017, Cisco estimated that people used nearly five billion internet-connected devices to create links to machines in their cars, workplaces, and homes.[104] Current projections estimate that the number will grow as high as 30.9 billion internet-connected devices by 2025.[105] Federal, state, and local governments are incorporating internet-connected devices to conduct surveillance, monitor pollution levels, and guide the flow of traffic.[106] Internet-connected cameras have become particularly popular information-

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what-websites-know-about-you-just-from-the-way-you-browse.

[97]   *Id.*

[98]   *See id.*

[99]   *See generally The Myth of Social Media, supra* note 8, at 2–3 (outlining the gathered statistics for how many users are active daily on different social media platforms).

[100]   *E-Commerce Payment Trends: United States*, J.P. MORGAN (2019), https://www.jpmorgan.com/merchant-services/insights/reports/united-states.

[101]   Kihong Park, *supra* note 30, at 1.

[102]   *The Sensor Based Economy,* WIRED, https://www.wired.com/brandlab/2017/01/sensor-based-economy/ (last visited May 5, 2021).

[103]   *Id.*

[104]   *Cisco Annual Internet Report (2018–2023) White Paper*, CISCO SYS. (Mar. 9, 2020), https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html#_Toc532256794.

[105]   Knud Lasse Lueth, *State of the IoT 2020*, IoT ANALYTICS, (Nov. 19, 2020) https://iot-analytics.com/state-of-the-iot-2020-12-billion-iot-connections-surpassing-non-iot-for-the-first-time/.

[106]   Tam Harbert, *Practical Uses of The Internet of Things in Government Are Everywhere*, GOV. TECH. (Jan. 2017), https://www.govtech.com/network/Practical-Uses-of-the-Internet-of-Things-in-Government-Are-Everywhere.html.

gathering tools for individuals, businesses, and governments.[107] These increases in sensor deployment are making more of the previously offline world digitally legible.[108]

Third, legibility increases as communications technology enables near-instantaneous sharing of information with people far beyond the reach of physical communications.[109] Even if the total amount of legible data in the world remained static, modern communications tools expand the number of people to whom certain types of information are legible.[110] Such information includes breaking international news, the publicly shared opinions of many other persons, and personal communications in almost real-time.[111] We can access in near-real time information about occurrences half the globe away.[112] Communications have greatly increased the amount of potential information available to any connected individual.[113]

Finally, increased computational power has helped turn raw signals into useful information.[114] An increase in raw observable signals is not an increase in legibility.[115] It depends on whether that data is useful for a particular purpose. Turning signals into legible—and therefore useful—information requires analysis.[116] Prior to the computer age, humans were the primary repositories of analytical power. Now, we have silicon machines that can perform sophisticated data analysis faster than humans can do addition, with the power of these devices continuously increasing.[117] From 1956 to 2015, computing power grew one-trillion-fold.[118] This computational power makes it

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[107] Trevor Timm, *The Government Just Admitted It Will Use Home Devices for Spying*, GUARDIAN (Feb. 9, 2016), https://www.theguardian.com/commentisfree/ 2016/feb/ 09/internet-of-things-smart-devices-spying-surveillance-us-government.

[108] *The Sensor Based Economy, supra* note 102.

[109] John Boitnott, *Tech Is Changing the Way We Get Our News, and It's Not Stopping*, INC. (Jul. 22, 2015), https://www.inc.com/john-boitnott/tech-is-changing-the-way-we-get-our-news-and-it-s-not-stopping.html.

[110] STEPHEN D. REESE, JOURNALISM AND GLOBALIZATION, SOCIOLOGY COMPASS 345 (Univ. of Texas 2010), https://journalism.utexas.edu/sites/default/files/journalism-globalization.pdf.

[111] *Id.* at 347.

[112] *Id.* at 350.

[113] Castells, *supra* note 92.

[114] William Silver, *Image Processing: Turning Digital Data Into Useful Information,* PHOTONICS MARKETPLACE (last visited May 5, 2021), https://www.photonics.com/ Articles/Image_Processing_Turning_Digital_Data_into/a25135.

[115] *Id*.

[116] *Id*.

[117] Alison DeNisco Rayome, *MIT's Automated Machine Learning Works 100x Faster Than Human Data Scientists*, TECHREPUBLIC (Dec. 19, 2017), https://www.techrepublic.com/article/mits-automated-machine-learning-works-100x-faster-than-human-data-scientists/.

[118] Max Roser & Hannah Ritchie, *Technological Progress*, OUR WORLD IN DATA https://ourworldindata.org/technological-progress (last visited May 5, 2021).

possible to glean insights from large data sets.[119]

Data analytic tools can help increase legibility like a microscope, by identifying entirely new knowledge.[120] Big data analytics can make legible unexpected connections within large data sets, extracting information embedded in a system that no one could explicitly identify.[121] For example, the FDA used a database of thousands of Kaiser Permanente patient profiles to identify a heightened risk of heart attack in patients using Vioxx, an arthritis drug.[122] Indeed, it appears that some of these analytical tools can make legible certain types of *mētis*, Scott's term for embedded knowledge that usually cannot be made legible.[123]

In other cases, algorithmic techniques appear capable of capturing *mētis* even if it cannot make that knowledge legible.[124] Computer scientists have crafted algorithms that learn tasks by doing: riding a bike, playing Go, etc.[125] One could describe certain types of deep learning as learning *mētis* – knowledge that cannot be specified in rule sets but can only be learned through repeated exposure to varying but similar situations.[126] Indeed, the familiar tradeoff between the explainability and the accuracy of certain deep learning algorithms is a tangible example of what might be lost when *mētis* is discarded.[127]

But while these analytic tools are powerful, one should not overstate their capabilities. Data analysis and machine learning are not flawless or simple

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[119] Dave Muoio, *With $7M Contract, NIH Taps Big Data Analysis Platform Palantir to Streamline Health Research*, MOBIHEALTHNEWS (Sep. 24, 2018), https://www.mobihealthnews.com/content/7m-contract-nih-taps-big-data-analysis-platform-palantir-streamline-health-research.

[120] Ryan Ayers, *The Small Business Owner's Guide to Data Analytics*, BUSINESS.COM (last updated Sept. 22, 2020), https://www.business.com/articles/data-analysis-for-small-business/.

[121] George Zarkadakis, *5 Things AI Can Do Better Than Humans*, HUFFPOST (last updated Jan. 4, 2016), https://www.huffpost.com/entry/5-things-ai-can-do-better_b_8906570.

[122] Anna Wilde Mathews & Scott Hensley, *Big HMO Reconsiders Vioxx After Study Points to Heart Risks*, WALL STREET J. (Aug. 26, 2004), https://www.wsj.com/articles/SB109346588678101103.

[123] Christopher M. Patrick, *Democracy: Metis or Techne?*, MESOPOTAMIAN MARINE (April 1, 2013), https://mesopotamianmarine.wordpress.com/2013/04/01/democracy-metis-or-techne-3/.

[124] *See generally* Will Knight, *This AI Algorithm Learns Simple Tasks as Fast as We Do*, MIT TECH. REV. (Dec. 10, 2015), https://www.technologyreview.com/2015/12/10/164598/this-ai-algorithm-learns-simple-tasks-as-fast-as-we-do/.

[125] *Id*.

[126] SCOTT, *supra* note 1, at 11.

[127] *Id*.

processes.[128] Such insights are not perfect, and sometimes not even useful. Even the most powerful deep learning tools today operate more like animal senses than like human cognition.[129] And there are many well-known challenges, such as overfitting, underfitting, and unrepresentative source data.[130] Sometimes, more data can increase the difficulty of generating information or knowledge.[131] It can become difficult to separate signal from noise. Data can be mistaken or unrepresentative. Humans also remain subject to the same cognitive biases which large data sets can exacerbate.[132] For example, we often identify coincidences as meaningful, and big data sets make it easier to detect correlations that turn out to be coincidental. Despite these challenges, computational tools can help generate knowledge and understanding from gathered data, making good use out of the world's increased legibility.[133]

These four trends mean that we have greater access to information about the state of the world. We have access to that information without regard to distance, and we can access it in a manner that is understandable and usable to a wider number of people.

IV. INCREASED LEGIBILITY HAS TRIGGERED CONCERNS

This rapid increase in the legibility of the world has generated new consumer and business fears.[134]

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[128] James Vincent, *These Are Three of the Biggest Problems Facing Today's AI*, VERGE (Oct. 10, 2016), https://www.theverge.com/2016/10/10/13224930/ai-deep-learning-limitations-drawbacks.

[129] *See* Adnan Darwiche, *Human-Level Intelligence or Animal-Like Abilities?*, 61 COMM. OF ACM (2018), https://dl.acm.org/citation.cfm?doid=3281635.3271625.

[130] Greg Council, *The Machine Learning Data Dilemma*, UPSIDE (Apr. 15, 2019), https://tdwi.org/articles/2019/04/15/adv-all-machine-learning-data-dilemma.aspx#:~:text=Two%20common%20problems%20caused%20by%20poor%20data%20curation%20are%20overfitting%20and%20bias.&text=Data%20used%20for%20machine%20learning,require%20much%20more%20complex%20data.

[131] Ari Zoldan, *More Data, More Problems: Is Big Data Always Right?*, WIRED (May 2013), https://www.wired.com/insights/2013/05/more-data-more-problems-is-big-data-always-right/.

[132] James Manyika et al., *What Do We Do About the Biases in AI?,* HARV. BUS. REV. (Dec. 25, 2019), https://hbr.org/2019/10/what-do-we-do-about-the-biases-in-ai.

[133] Janna Anderson & Lee Rainie, *Code-Dependent: Pros and Cons of the Algorithm Age*, PEW RES. CTR. (Feb. 8, 2017), https://www.pewresearch.org/internet/2017/02/08/code-dependent-pros-and-cons-of-the-algorithm-age/.

[134] *Id*. (noting that some participants of the study fear that algorithm use has a potential for good, but companies may use it to gain an unfair advantage).

A.   People Fear They Are Losing Privacy

IT tools increase the legibility of the world, much like the microscope.[135] But to a greater proportion than the microscope, some of today's tools of increased legibility are used to study individuals, which concerns many people.[136]

Online interactions are by design and necessity highly legible, both intentionally and out of necessity.[137] As noted above, more of people's day-to-day activities occur online and therefore the legibility of those activities increases—just compare the capturable data involved when shopping on Amazon.com to shopping in your local CVS. Browsing the internet involves interactions with other people's online computers. These interactions are generally viewable by the owners of those computers and others, even if the consumer browses while sitting at home. For example, online advertising technology makes the path one takes across the internet more legible in order to deliver better targeted ads.[138]

Furthermore, the rise of sophisticated sensors and computational techniques means that our real-world interactions are also growing more legible.[139] Smart sensors can detect when we arrive home or enter a retail store.[140] Facial recognition technology potentially removes the relative anonymity of walking down a busy city block or drinking in a busy bar.[141] We shout out questions to home assistants, which use that information to improve the responses they give us.[142]

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[135] Rachel Coldicutt, *Why Data Legibility is More Important than Explainability*, DOTEVERYONE (Oct. 15, 2018), https://medium.com/doteveryone/data-legibility-and-a-common-language-coping-not-coding-part-2-8afb687de60.

[136] Brooke Auxier et al., *Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information*, PEW RES. CTR. (Nov. 15, 2019), https://www.pewresearch.org/internet/2019/11/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/.

[137] Christine Huang & Laura Silver, *Social Media Users More Likely to Interact With People Who Are Different From Them*, PEW RES. CTR. (Aug. 22, 2019), https://www.pewresearch.org/internet/2019/08/22/social-media-users-more-likely-to-interact-with-people-who-are-different-from-them/.

[138] Bennet Cyphers, *A Guided Tour of the Data Facebook Uses to Target Ads*, ELEC. FRONTIER FOUND. (Jan. 24, 2019), https://www.eff.org/deeplinks/2019/01/guided-tour-data-facebook-uses-target-ads.

[139] Anderson & Rainie, *supra* note 133.

[140] Ivan Moreno, *How Floor Sensors Are Helping Retailers Track Shoppers' Behavior*, DAILY HERALD (Jan. 20, 2018), https://www.dailyherald.com/business/20180120/how-floor-sensors-are-helping-retailers-track-shoppers-behavior.

[141] Jelisa Castrodale, *Tech Company Says Using Facial Recognition Technology in Bars Isn't Creepy at All*, VICE (Aug. 2, 2019), https://www.vice.com/en/article/9ke9yd/tech-company-says-using-facial-recognition-technology-in-bars-isnt-creepy-at-all.

[142] Xavier Harding, *Alphabet's Latest Data Grab: Google Home Records Far More*

As a result of the increased legibility of our activities, some people are concerned that they are losing privacy.[143] The term "privacy" is notoriously flexible, but such concerns are generally rooted in a perceived or actual loss of the ability to control others' use of data about oneself.[144] As the amount of legible information about individuals grows and becomes accessible to other people, the more behavior becomes effectively public rather than effectively private.[145]

In the past, people were concerned about the privacy impacts of then-new technologies that increased the legibility of human activity.[146] Sometimes this concern generated new laws.[147] For example, the introduction of popular portable cameras in the late 1800s made it possible to capture permanent information about individuals in public places.[148] This new technology prompted calls for new legal privacy protections in the United States.[149] In the 60s and 70s, concerns about new credit reporting services that used data about individuals motivated Congress to pass federal legislation governing the use of such information.[150] In other cases, society adapted without new legal approaches.[151] For example, telephone caller ID features developed in the late 80s were initially criticized as privacy violations, but nowadays most people consider the technology to actually protect privacy.[152]

Sound Than Users Realize, Report Says, FORTUNE (July 11, 2019), https://fortune.com/2019/ 07/11/google-home-listening-recording/.

[143] Cameron F. Kerry, *Why Protecting Privacy Is a Losing Game Today—and How to Change the Game*, BROOKINGS (July 12, 2018), https://www.brookings.edu/research/why-protecting-privacy-is-a-losing-game-today-and-how-to-change-the-game/.

[144] Auxier et al., supra note 136.

[145] Anderson & Rainie, *supra* note 133.

[146] Auxier et al., *supra* note 136.

[147] *See generally* Cameron Kerry, *Privacy and Cybersecurity Get Political Legs*, BROOKINGS (Feb. 25, 2015), https://www.brookings.edu/blog/techtank/2015/02/25/privacy-and-cybersecurity-get-political-legs/ (indicating the amount of new legislation in cybersecurity in the 113th and 114th congress).

[148] Mia Fineman, *Kodak and the Rise of Amateur Photography,* METROPOLITAN MUSEUM OF ART (Oct. 2004), https://www.metmuseum.org/toah/hd/kodk/hd_kodk.htm.

[149] *See* Neil Chilson, *When Considering Privacy Legislation*, FEDERALIST SOC'Y, https://regproject.org/paper/considering-federal-privacy-legislation/ (citing Louis Brandeis & Samuel Warren, *The Right To Privacy*, 4 Harv. L. Rev. 193 (1890)).

[150] *See* Fair Credit Reporting Act, 15 U.S.C. § 1681 *et seq.*

[151] *See generally* Mohana Ravindranath, *Who's in Charge of Regulating the Internet of Things,* NEXTGOV (Sept.1, 2016), https://www.nextgov.com/emerging-tech/2016/09/internet-things-regulating-charge/131208/ (explaining that legislation has not been created of the difficult in interconnectivity of the "internet of things.").

[152] John Burgess, *Privacy Issues Pervade Plans for 'Caller ID' Phone Service*, WASH. POST (Dec. 5, 1989), https://www.washingtonpost.com/archive/business/1989/12/05/privacy-issues-pervade-plans-for-caller-id-phone-service/5f90ad66-c389-406f-8e0e-a756f59b8f12/.

B.   People Fear They Are Being Taken Advantage Of

Another concern often expressed about the increased legibility of the world is that companies, or other people, will use information about someone else to gain leverage over them.[153] This fear is prompted by the uneven distribution of increased legibility—people worry that someone has compiled information about them, but they do not know what information they possess, or how the other party might use it.[154] For example, some people worry that companies will learn the price tolerance of various individuals and will charge higher prices for the same product to those who are willing to pay more.[155] People also worry that companies will gather additional information and use it to commercially manipulate others through advertising or other messages.[156] Often, this latter fear is not personalized: People frequently believe they will not be fooled by such techniques but remain concerned that others will be.[157]

C.   People Fear Their Business Models Are Becoming Obsolete

Some people also worry that increased legibility of the world is making certain business models obsolete.[158] Indeed, the growing legibility of the world has the potential to disrupt many current lines of business.[159] It has already significantly transformed the advertising industry and, with it, the business models for content producers.[160] For example, witnesses to newsworthy events can now share directly with interested audiences without news producers or reporters. Real-time traffic applications reduce the need for helicopter news

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[153] *New Poll Reveals 7 in 10 People Want Governments to Regulate Big Tech over Personal Data Fears*, AMNESTY INT'L (Dec. 4, 2019), https://www.amnesty.org/en/latest/news/2019/12/big-tech-privacy-poll-shows-people-worried/.

[154] Auxier et al., *supra* note 136.

[155] Phillip Longman, *Big Tech is Watching Your Wallet*, WASH. MONTHLY (April 2019), https://washingtonmonthly.com/magazine/april-may-june-2019/big-tech-is-spying-on-your-wallet/.

[156] *E.g.*, Arunesh Mathur et al., *Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites*, 3 ACM CONF. ON COMPUTER-SUPPORTED COOPERATIVE WORK & SOCIAL COMPUTING 81, 85 (2019).

[157] Michael Barthel et al., *Many Americans Believe Fake News Is Sowing Confusion*, PEW RES. CTR. (Dec. 15, 2016), https://www.journalism.org/2016/12/15/many-americans-believe-fake-news-is-sowing-confusion/.

[158] Gordon Hui, *How the Internet of Things Changes Business Models,* HARVARD BUS. REV. (July 29, 2014), https://hbr.org/2014/07/how-the-internet-of-things-changes-business-models.

[159] *Id.*

[160] *The Media Industry: In the Vanguard of Digital Transformation*, WORLD ECON. F., http://reports.weforum.org/digital-transformation/the-media-industry-in-the-vanguard-of-digital-transformation/ (last visited May 5, 2021).

radio reports.[161] Retail security systems that track unpurchased merchandise leaving the store reduce the need for security guards.[162]

Being disrupted by a new technology is a common and reasonable concern, from the point of view of the incumbent business owner. Technology-driven productivity gains often threaten established business models. Incumbents with deep investments into the status quo will understandably be reluctant to give up their position, even if there are clear overall benefits to society.[163]

D.   People Fear Others Are Being Misinformed

The above-described concerns are fears about the increased legibility of the world—the ability to more accurately assess the state of the world.[164] However, some fear that people are misusing communications to propagate less accurate or downright deceptive information.[165] The increase of this fear is, in part at least, due to increased legibility.[166]

The same modern ability of an individual to speak to millions of others can be used to spread both false and true information.[167] The declining power of gatekeeper entities who used to vet stories before mass distribution means that false stories can draw attention or website traffic and quickly propagate.[168] There is evidence that well-resourced entities with malicious intentions have used internet platforms to spread propaganda.[169] And more traditional media

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[161] Olivia Allen-Price, *From Aviators to Apps: The Evolution of Traffic Data*, KQED (Jan. 17, 2019), https://www.kqed.org/news/11718629/from-aviators-to-apps-the-evolution-of-traffic-data.

[162] Raymund Flandez, *Stop That Thief,* WALL STREET J. (June 12, 2008), https://www.wsj.com/articles/SB121322091260765769.

[163] *See* Rick Newman, *10 Great Companies that Lost Their Edge*, U.S. NEWS (Aug. 19, 2010), https://money.usnews.com/money/blogs/flowchart/2010/08/19/10-great-companies-that-lost-their-edge.

[164] *See id.*

[165] Dannagal G. Young & Shannon McGregor, *Mass Propaganda Used to Be Difficult, But Facebook Made It Easy*, WASH. POST, (Feb. 14, 2020), https://www.washingtonpost.com/outlook/2020/02/14/mass-propaganda-used-be-difficult-facebook-made-it-easy/.

[166] *Id.*

[167] Sara Brown*, MIT Sloan Research About Social Media, Misinformation, and Elections*, MIT SLOAN SCH. OF MGMT. (Oct. 5, 2020), https://mitsloan.mit.edu/ideas-made-to-matter/mit-sloan-research-about-social-media-misinformation-and-elections.

[168] Of course, the old gatekeeper model was no guarantee of truthful reporting. Media-driven scares, such as the panic over satanic cults in the 80s, demonstrate that misinformation can and has spread through traditional media. *See* JESSE WALKER, THE UNITED STATES OF PARANOIA (HarperCollins 2013). Indeed, there is evidence that traditional media has been a major contributor to the spread of misinformation in some cases. *See generally* YOCHAI BENKLER ET AL., NETWORK PROPAGANDA: MANIPULATION, DISINFORMATION, AND RADICALIZATION IN AMERICAN POLITICS (Oxford Univ. Press 2018).

[169] *See* YOCHAI BENKLER, ET AL., *supra* note 168, at 6, 38 (noting that experts identified a

have amplified such efforts.[170]

As a result, there is almost certainly more misinformation available to individuals than there was twenty or forty years ago.[171] However, the store of available truthful information available has also increased significantly.[172] Thus, it is not clear whether the ratio of good to bad information has changed over that time; it is certainly easier than ever to research the correct answer than at any time in the past.[173]

If it is easier than ever to find correct information, why is the fear of misinformation growing? One reason is a direct result of increased legibility.[174] Misinformation created or spread by others is now more visible than ever.[175] People have always spread rumors, misinformation, and falsehoods, but never have such statements been as permanently available to a worldwide audience. Rantings of a street corner flat-earth conspiracy theorist reach a small audience and disappear, forgotten. Online, however, such rantings become semi-permanent evidence of misinformation, so the increase in legibility of misinformation might suggest it is increasing.[176] Furthermore, when faced with evidence that a large group of people believe something preposterous or distasteful, it can be difficult to accept that those people have independently reached a different conclusion. It may be easier to believe that such people are less autonomous than us and are being manipulated.[177]

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set of actors as "prime suspects in causing the present state of information disorder," and later noting, "we are operating in a propaganda-rich environment and . . . network propaganda is a much deeper threat to democracy than any out-of-human-control socio-technical process.").

[170] *See generally id.*

[171] *See id.* at 37–38 (noting the widespread presence of misinformation in modern media, but also noting that its effect is likely less influential than outright propaganda).

[172] *See id.* at 386.

[173] *See id.* at 386 ("[these] observations suggest that professional journalism continues to play a critical role in anchoring public debate in facts and evidence-based norms and that it functions within a vibrant network of nontraditional sites that constitute a more decentralized, participatory networked public sphere that can work around and through its interactions with the mainstream to diversify expression, counter some of the failure modes of the mainstream, and make mobilization more democratic.").

[174] *See* Filippo Menczer & Thomas Hills, *Information Overload Helps Fake News Spread and Social Media Knows It*, SCI. AM., DIV. OF SPRINGER NATURE AM., INC. (Dec. 1, 2020), https://www.scientificamerican.com/article/information-overload-helps-fake-news-spread-and-social-media-knows-it/.

[175] *See id.*

[176] *See* Brown, *supra* note 167.

[177] *See* Menczer & Hills, *supra* note 174.

V. LESSONS FROM *SEEING LIKE A STATE*

In seeking to take advantage of the opportunities raised by increased legibility, while addressing the related concerns, companies and policymakers can learn from Scott's description of the effects of discovered and imposed legibility generated during the Industrial Age.[178]

SLAS distills four characteristics common to failed government efforts to change complex systems.[179] First, government uses simplifying tools to increase the legibility of the system to a central authority.[180] Second, government embraces a high-modernism mindset with ambitious, overly confident, and comprehensive plans for redesigning the system.[181] Third, government possesses enough authority and power to mandate adoption of these plans.[182] Finally, civil society is too weak to overtly resist the imposition of the plans.[183]

Scott describes the results of interventions that share these four characteristics:

> At best, the new order was fragile and vulnerable, sustained by improvisations not foreseen by its originators. At worst, it wreaked untold damage in shattered lives, damaged ecosystems, and fractured or impoverished societies.[184]

To avoid these consequences, Scott argues for "institutions that are instead multifunctional, plastic, diverse, and adaptable—in other words, institutions that are powerfully shaped by *mētis*."[185] His four characteristics of failed interventions suggest four corresponding lessons for developing "*mētis - friendly institutions*," as he calls them:

1. Minimize simplistic legibility

2. Temper ambitious plans with prudence and humility

3. Reduce the planner's ability to impose a plan

4. Increase the ability of participants to resist or shape such plans.[186]

I will elaborate on each of these strategies. I have tried to keep the discussion generic enough to apply to company decisions as well as the government decisions addressed by Scott. Each lesson can be applied

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[178] *See generally* SCOTT, *supra* note 1, at 11.
[179] *Id*. at 4.
[180] *Id*.
[181] *Id*.
[182] *Id*. at 5.
[183] *Id*.
[184] *Id*. at 352.
[185] *Id*. at 353.
[186] *Id*. at 356.

separately or in combination. Although Scott mostly discusses government institutions, he argues for the importance of incorporating *mētis* in any institution where "the quality of the institution and its product depends on engaging the enthusiastic participation of its people."[187] That description certainly applies to online platforms, as do these lessons.[188]

A. Minimize Simplistic Legibility

As discussed earlier, when a state seeks to understand a complex system in order to control it, the state increases legibility of that system by reducing complexity.[189] It does so by replacing or discarding knowledge not relevant to its purpose.[190] Imposing legibility in pursuit of one purpose can change the system, undermining other purposes the system may have also served.[191] The old business adage that "you get what you measure" applies here. Such simplistic, reductive legibility efforts abandon information and can damage the system.[192]

There are two ways to minimize simplistic legibility. The most straightforward would be to avoid imposing legibility in the first place.[193] But businesses and government need information for certain purposes. They need insight into the system they seek to govern. Without such information, their efforts will have less effect in achieving their goal and possibly do more harm to the governed system.[194]

Still, in some circumstances, the benefits of limiting legibility could outweigh the costs. In the physical world, where imposed legibility replaces a local tradition or knowledge, withdrawing imposed legibility could enable people to re-establish their local knowledge and *mētis*.[195] One might reasonably decide that the benefits from this would be worth forgoing or limiting a specific purpose. For example, a central government might decline to adopt a single official language despite the decrease in legibility.

But in the digital context, the network protocols—the physics of cyberspace —must be chosen by someone. In this designed environment, defaulting to the

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[187] *Id*. at 353.

[188] *See id*. (explaining how incorporating *mētis* is important in all institutions).

[189] *Id*. at 2.

[190] *Id*.

[191] *Id*. at 22–23.

[192] *See id*. at 3 (recognizing that in promoting legibility states do not consider all information, rather only pieces of particular interest).

[193] *See id*. at 2 (acknowledging briefly the downside of state-imposed legibility).

[194] *See id*. (describing how a lack of knowledge on subjects hinders the entity's abilities).

[195] *Id*. at 24.

highest possible level of legibility makes sense. After all, building fundamental limits to information in the foundation of a general-purpose system would be like changing the physics of light in order to prevent peeping toms. It would permanently foreclose some types of inquiry without knowing what tradeoffs that might impose. Instead, it is better to make the lowest level of the system as legible as possible, and then build protocols on top of it to protect information. Don't change the physics of light—instead, install a privacy fence.

The second way to limit simplistic legibility is to avoid oversimplifying as much as possible.[196] This is difficult. In all cases, imposing legibility affects information that could be useful for other purposes. In the worst cases, including many of those documented by Scott, the imposed legibility destroys information necessary to carry out the state's intended purpose.[197]

But while it is not possible to completely avoid simplification, different methods of imposing legibility differ in how and what they simplify.[198] Being conscious of the collateral effects of the methods can help the authority choose the least reductive model.[199] New data analysis tools may help because they can be used on complex, non-heterogenous data. Rather than squeeze needed information into a governance-friendly format, analytical tools may make it possible to collect the information in the more complex form yet still derive useful knowledge from it.[200]

B. Temper Ambitious Plans with Prudence and Humility

The second lesson is to avoid the high-modernist mindset.[201] This does not necessarily mean abandoning lofty goals, but it does mean pursuing them with

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[196] *See id*. at 11 (acknowledging the results of oversimplification).

[197] *Id*. at 22–23.

[198] *Id*. at 353–54.

[199] *Id*. at 354.

[200] Some see these powerful tools combined with the increased legibility of the world as an opportunity to replace capitalism's decentralized market economy with more centralized mechanisms to distribute goods and services. *See generally* Viktor Mayer-Schönberger & Thomas Ramge, 15 REINVENTING CAPITALISM IN THE AGE OF BIG DATA 163 (London: Basic Books 2018) (discussing the use of data analytics in conjunction with other technology to gather information); Evgeny Morozov, *Digital Socialism: The Calculation Debate in the Age of Big Data*, NAT'L LEFT REV. (June 2019), https://newleftreview.org/issues/II116/articles/evgeny-morozov-digital-socialism. These works suggest that modern increases in legibility are reviving a high-modernist mindset. Responding to those ideas is beyond the scope of this paper, but a preliminary critique is that this misunderstands the functions of emergent systems like markets. The market is not just a price-calculating machine – it is a system for expressing human needs and incentivizing the discovery of new ways to meet them. Furthermore, while increased legibility may help governments enforce rules better, it provides little guidance on what those rules should be.

[201] Scott, *supra* note 1, at 4.

a plan that reflects some degree of humility, respect for the existing knowledge in the system, and a realistic assessment of what might go wrong.[202] Scott recommends two concrete methods to avoid high modernism.[203] First, he suggests planners take incremental steps toward their goal and allow plenty of opportunities to receive feedback and adjust.[204] Second, he encourages approaches that can be reversed without too much disturbance if things go badly.[205] Both recommendations help accommodate inevitable surprises and unanticipated reactions and adjustments by participants.[206]

For example, in dealing with misinformation, rather than adopting a comprehensive initial plan that attempts to cover all categories of potential misinformation, platforms could identify one narrow category of misinformation to focus on. They could test several different techniques on identifying this type of content and how to deal with it (by removal or flagging?). This would allow them to learn from user feedback and any adaptations by generators of such misinformation, and then apply those lessons to broader categories of misinformation.

C. Reduce the Planner's Ability to Impose a Plan

Another lesson is to limit the ability of the planner to impose a plan.[207] If the planner cannot force adoption of a plan, it will need to persuade people—a process that requires compromise and emergent decision making, and therefore incorporates a far wider range of input and knowledge.[208]

The US government has existing limits on its ability to impose central plans: constitutional rights for individuals, separation of powers, and federalism, to name a few.[209] Some of these limits have eroded over time, but they remain fundamentally sound. Other nations have far fewer or no such limits.[210] While it may be desirable to strengthen such limits, this is not a practical approach for our purposes and in any case is outside of the scope of this paper.

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[202] *Id*. at 4, 6.

[203] *Id*. at 6.

[204] *Id*. at 4–5.

[205] *Id*.

[206] *Id*.

[207] *Id*. at 13–14.

[208] *Id*. at 6.

[209] U.S. CONST. pmbl.; U.S. CONST. art. I, § 1; U.S. CONST. art. II, § 1; U.S. CONST. art. III, § 1; U.S. CONST. art. IV, § 1.

[210] Teresa Cheng, *Why Separation of Powers Has No place in Hong Kong's Political Structure*, S. CHINA MORNING POST (Sept. 9, 2020), https://www.scmp.com/comment/opinion/article/3100695/why-separation-powers-has-no-place-hong-kongs-political-structure.

But how might a large platform apply this lesson? Platforms do face constraints on their authority, as mentioned earlier; for example, market pressures, local law, and investor interests.[211] One way to further limit a platform's ability to impose a central plan would be to strengthen any of these constraints. For example, local laws could be changed to limit platforms' abilities. Of course, such laws themselves have all the weaknesses of centralized decision-making and should be evaluated accordingly.

Still, platforms could themselves take additional measures to limit their ability to impose certain plans. For example, platforms could push decision making out to independent organizations or standards bodies.[212] They could make legally binding promises about how they will use or change the platform. Yet another approach is to make certain types of control technically infeasible. For example, Mark Zuckerberg has recently announced that Facebook is shifting toward an encrypted private chatroom business model.[213] Such a self-imposed reduction of legibility would limit Facebook's ability to review or moderate certain content.

D. Increase the Ability of the Participants to Resist or Shape Such Plans

Finally, governments and companies could improve the ability of individuals and the system to resist and/or to shape plans. Scott specifically encourages the establishment of *mētis*-friendly systems that enhance users and incorporate their values.[214] He argues that one can test for *mētis*-friendly systems by asking "to what degree does it promise to enhance the skills, knowledge, and responsibility of those who are a part of it?" and "how deeply [the institution] is marked by the values and experience of those who compose it."[215]

Usefully incorporating user input for large populations usually requires decentralized approaches where a company (or government) does not control content.[216] The paradigmatic example of such a system is the complex market forces that channel consumer demands into producer incentives.[217] Such solutions can scale readily with the addition of more users.[218] They can apply a

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[211] Devin Coldewey, *Who Regulates Social Media?*, TECHCRUNCH (Oct. 19, 2020), https://techcrunch.com/2020/10/19/who-regulates-social-media/.

[212] Issie Lapowsky, *How Facebook's Oversight Board Could Rewrite the Rules of the Entire Internet,* PROTOCOL (May 6, 2020), https://www.protocol.com/facebook-oversight-board-rules-of-the-internet.

[213] Dave, *supra* note 91.

[214] SCOTT, *supra* note 1, at 353.

[215] *Id*.

[216] *Id*.

[217] *Id*.

[218] *Id*.

user's knowledge and values directly to the problem they are facing.[219] Additionally, they are flexible enough to adapt to changing circumstances or user needs.[220]

To embrace this lesson, platforms could create tools that empower various users or groups of users to help govern themselves and their communities. Such tools could include consumer review and ratings systems, deputizing users, creating more broadly accessible moderator tools, and incentivizing beneficial user behavior. Platforms like Wikipedia and Reddit already use such tools and benefit from the social norms that have developed around them.[221] These tools enable the platform to incorporate user knowledge and *mētis* and evolve as users change.[222]

VI. EXAMPLE APPLICATION: PRIVACY – RULES OR STANDARDS?

Many policy problems—including the four legibility-generated fears discussed earlier—could benefit from applying the *SLAS* lessons. While I provide a few examples of how the four lessons might be employed by platforms and regulators, it is worth digging into another example to consider how those strategies might be applied.

As discussed earlier, much of the concern around privacy comes from individuals misperceiving how legible their behaviors are. People, institutions, and companies are still adapting to increased legibility.[223] As society adapts, there are a wide number of tools available. These include shifting social norms, technological changes, private agreements, soft law, enforcement of common law or general consumer protection laws, and new legislation.[224] The *SLAS* lessons discussed above provide one way to evaluate and compare the forms of these tools in general, or to compare specific proposals of how to use these tools.

In order to demonstrate the *SLAS* criteria, however, I will limit myself to comparing the two different federal privacy approaches in the US: the rule-based regulatory approach[225] and the case-by-case enforcement of general standards approach.[226] Contrary to common perception, the US does have

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[219] *Id*. at 353–54.

[220] *Id*.

[221] Prerna Juneja et al., *Through the Looking Glass: Study of Transparency in Reddit's Moderation Practices*, 4 PACM ON HUMAN-COMPUTER INTERACTION 1, 5 (2019).

[222] *Id*.

[223] SCOTT, *supra* note 1, at 353.

[224] *See* Chilson, *supra* note 149.

[225] Cass R. Sunstein, *Problems with Rules,* 83 CALIF. L. REV. 953, 1021 (1995).

[226] Neil Chilson, *When Considering Federal Privacy Legislation*, 47 PEPP. L. REV. 917,

federal privacy protections, and they take these two forms. The US regulates the practices of specific industries, such as financial, credit, and health.[227] In these sectors companies must follow detailed *ex ante* rules established by Congress and/or regulators—the rules-based approach.[228] For other sectors, the Federal Trade Commission brings *ex post* enforcement actions under its consumer protection authority when it believes companies' uses of consumer data have been unfair or deceptive—the standards approach.[229]

Outside of the privacy context, lawyers, economists, and philosophers have long debated rules versus standards.[230] There are many benefits and detriments to each. This example is not intended to rehash that entire, useful debate. My purpose is to evaluate these two approaches to privacy considering the lessons from *SLAS.*

Case-by-case enforcement of standards minimizes simplistic legibility.

Even ignoring the content of the rules and standards being compared, rules by their nature impose more legibility than do standards. Rulemaking is characterized in part by imposing legibility on the governed practices and entities.[231] For example, privacy statutes, whether sector specific like the Health Information Privacy Protection Act or economy-wide like Europe's General Data Protection Regulation, define many characteristics of information and business practices.[232] Is data sensitive or non-sensitive? Personally identifiable or anonymized? Health data? What is a data processor as compared to a data controller? Stakeholders fiercely debate such regulatory definitions because those definitions create simplified, legally significant categories that will apply to future types of information.[233] Creating definitions that apply in

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944 (2020).

[227] Margo H. K. Tank et al., *Fintech Regulation in the USA,* LEXOLOGY (Jan. 24, 2019), https://www.lexology.com/library/detail.aspx?g=bf6638f5-b77c-457f-a0c7-aaf7e0483467.

[228] *Id*.

[229] *Privacy and Security Enforcement*, FTC, https://www.ftc.gov/news-events/media-resources/protecting-consumer-privacy/privacy-security-enforcement (last visited May 5, 2021).

[230] *See, e.g*., Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L. J. 557–629 (1992).

[231] Lawrence E. Ritchie et al., *OSC Burden Reduction Initiative – Rules-Based Versus Principle-Based Regulation*, OSLER (June 25, 2019)*, https://www.osler.com /en/blogs/risk/ june-2019/osc-burden-reduction-initiative-rules-based-versus-principle-based regulation.*

[232] Nigel Jones, *HIPAA and the GDPR: Understanding the Relationship*, PRIV. COMPLIANCE HUB, https://www.privacycompliancehub.com/gdpr-resources/hipaa-and-the-gdpr-understanding-the-relationship/ (last visited June 21, 2021).

[233] Jennifer Huddleston, *Four Questions to Consider When Deciding Potential Data Privacy Policy*, BRIDGE (Apr. 25, 2019), https://www.mercatus.org/bridge/ commentary/four-questions-consider-when-debating-potential-data-privacy-policy.

multiple situations requires distilling what is common to such scenarios and discarding the unique context of each situation. The broader the applicability of the definition, the more total context must be discarded to form a workable definition. That is why, for example, it is easier to define "sensitive" or personal information in a sector-specific privacy law (like financial services) than it is to define that same term for all sectors.

Compare the legibility imposed in rulemaking with *ex post* enforcement of privacy under general principles like "unfairness" and "deception."[234] Those terms are not defined ahead of time. Instead, those concepts are developed over time through application of judgment to different sets of facts. Regarding privacy, those concepts are further fleshed out by Federal Trade Commission ("FTC") "soft law" in guidance and reports.[235] Many of the same terms defined in privacy legislation are described in such guidance. For example, the FTC discusses what is sensitive personal information in reports, consumer and business education, and in case complaints.[236] However, the FTC's descriptions are inductive and common-law like, looking back to past specific cases to provide guidance for future decision-making.[237] For example, in any specific case the FTC may need to determine whether certain information is sensitive or not. Such categorization arguably imposes legibility on the facts of that case. The effects of assembling a definition over dozens or hundreds of cases is more like the microscope—a process of discovering legibility rather than imposing it.[238]

Such standards are often less legible to companies than rules. Indeed, companies often complain that the FTC's privacy and data security requirements are not clear, for example. This is one of the downsides of standards, and indeed, a direct consequence of avoiding simplistic categories.

Case-by-case enforcement reflects more prudence and humility than "comprehensive" privacy legislation.

Case-by-case enforcement avoids high modernism better than rule-based

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[234] Allen H. Denson & Latif Zaman, *States' Divergent Approaches to Unfair, Deceptive, and Abusive Acts and Practices Reveal Consumer Protection Priorities*, ABA (Aug. 22, 2019) https://www.americanbar.org/groups/business_law/publications/blt/2019/09/abusive-acts/.

[235] *Hard Law/Soft Law*, ECCHR, https://www.ecchr.eu/en/glossary/hard-law-soft-law/ (last visited May 5, 2021).

[236] *Protecting Personal Information: A Guide for Business*, FTC (Oct. 2016) https://www.ftc.gov/tips-advice/business-center/guidance/protecting-personal-information-guide-business.

[237] *Id*.

[238] SCOTT, *supra* note 1, at 2–3.

approaches.[239] It better embraces Scott's two suggestions. It is incremental, in that the standards evolve slowly as new cases are considered.[240] And while each case forms precedent for future cases, if the revised principle is not a good fit in future cases, it can be modified or reversed without too much disruption.

Compare that with what is often called "comprehensive" privacy legislation.[241] As the descriptor indicates, such plans are often broad in scope, setting detailed rules for every industry and business model.[242] They are typically discontinuous rather than incremental – the laws come entirely into effect upon the effective date.[243] Additionally, they are difficult to revise or reverse, with amendments taking on the same order of time as the original laws.[244]

Of course, some legislation and rules are crafted more prudently than others. Even if case-by-case approaches are off the table, legislators or regulators can still seek to follow this lesson in several ways. All else being equal, many prefer sector-specific legislation to generally applicable legislation.[245] Legislation can also adopt general principles, such as fiduciary-like duties or the FTC's own organic "unfairness and deception" statute, which will be fleshed out through agency enforcement.[246] Similarly, delegating rulemaking authority to an agency can minimize the need for congress to predict future developments—although the agency then faces a similar challenge.

Case-by-case enforcement reduces the planner's ability to impose broad privacy rules.

By its very nature, case-by-case enforcement is not conducive to imposing a plan.[247] Enforcement usually deals with one or a small number of individuals

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[239] Chilson, *supra* note 226.

[240] *See generally* SCOTT, *supra* note 1, at 11 (explaining that "certain forms of knowledge and control require a narrowing of vision.").

[241] *Reforming the U.S. Approach to Data Protection and Privacy*, COUNCIL ON FOREIGN REL. (Jan. 30, 2018), https://www.cfr.org/report/reforming-us-approach-data-protection.

[242] *Id*.

[243] *Effective Date*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/effective_date (last visited May 5, 2021).

[244] Sharece Thrower, *Regulatory Delay Across Administrations*, BROOKINGS INST. (July 10, 2019) https://www.brookings.edu/research/regulatory-delay-across-administrations/.

[245] *Sectoral Rules*, LAW INSIDER, https://www.lawinsider.com/dictionary/sectoral-rules (last visited May 5, 2021); *Applicable Law,* LAW INSIDER, https://www.lawinsider.com/dictionary/applicable-law-or-applicable-laws (last visited May 5, 2021).

[246] 15 U.S.C. § 45; *see also* FTC Unfair or Deceptive Acts or Practices, Fed. Trade Comm'n. Act, § 5 (2016).

[247] *See* Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 COLUM. L. Rev. 583, 583–86 (2014) (arguing that because most FTC privacy

or firms at a time.[248] It typically involves a limited set of specific actions by those parties.[249] The injunctive remedies imposed can be detailed and lengthy (FTC settlements are typically for 20 years, for example), but they usually only apply to the defendant.[250] It may be possible to implement a complex plan involving many parties using the tools of case-by-case enforcement: a Boston federal district judge managed the desegregation of Boston public schools in the 70s and into 80s, for example.[251] But its rarity speaks to its difficulty.

One of few areas of broad agreement in the privacy debate is that the FTC's case-by-case enforcement approach limits its ability to impose across the board privacy rules.[252] Many people argue that new privacy legislation ought to remedy this by delegating substantial and broad rulemaking authority to the FTC.[253] Others oppose broad rulemaking authority, believing that the current case-by-case approach is preferable or arguing that Congress should establish federal privacy regulations.[254] So, while people disagree on whether it is a good thing, most everyone would agree that the current general privacy approach in the US limits the FTC's ability to impose plans, following this lesson from *SLAS*.[255]

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law cases result in settlements, there is not a comprehensive body of case law for scholars to analyze and interpret as substantive privacy jurisprudence).

[248] *See id*. at 588 (explaining FTC's power to bring an action against an individual company for violating their privacy policies).

[249] *See id*. (noting what actions by an individual company would prompt the FTC to bring an action against them).

[250] *See id*. at 613–14 (explaining when and how the FTC imposes "corrective actions" on specific companies, and the how long the specific company must comply with these orders).

[251] Elaine Woo, *W.A. Garrity; Judge Desegregated Boston Schools*, L.A. TIMES (Sept. 18, 1999), https://www.latimes.com/archives/la-xpm-1999-sep-18-mn-11523-story.html.

[252] *See* Solove & Hartzog, *supra* note 247, at 589 (contending that if the FTC would clarify its standards, instead of dealing with issues on a case-by-case basis, they could implement a "holistic and robust privacy regulatory regime").

[253] Chris Jay Hoofnagle et al., *The FTC Can Rise to the Privacy Challenge, but not Without Help from Congress*, BROOKINGS (Aug. 8, 2019), https://www.brookings.edu/blog/techtank/2019/08/08/the-ftc-can-rise-to-the-privacy-challenge-but-not-without-help-from-congress/.

[254] Cameron F. Kerry & John B. Morris, Jr., *Framing a Privacy Right: Legislative Findings for Federal Privacy Legislation*, BROOKINGS (Dec. 8, 2020), https://www.brookings.edu/research/framing-a-privacy-right-legislative-findings-for-federal-privacy-legislation/.

[255] *See* SCOTT, *supra* note 1, at 357 (noting that laws should continually be modified to benefit the public in a democratic society).

Participants can challenge case-by-case enforcement of privacy standards more easily than a comprehensive privacy law or regulations.

At least for some participants, case-by-case enforcement is easier to challenge than legislation or rulemaking, although neither method is easy. Enforcement actions provide each defendant with an opportunity to challenge the action in court and with due process protections.[256] No matter the standard in place, the accused violator has a chance to persuade a neutral decisionmaker that the standard is wrong or that it does not fit the facts of his situation.[257]

Quite frankly, neither the standards-based approach nor the rules-based approach get us very far toward Scott's recommendation that systems find ways to deeply incorporate the knowledge and values of participants.[258] Neither approach is particularly inclusive. The participants who can share knowledge and values in a case-by-case approach are primarily the accused violators.[259] There are many other participants in a privacy enforcement system, including the customers or users of the accused business. Their views may not be well represented in court. Even worse are rules-based approaches, which cannot incorporate all local context present at the adoption of the rules, let alone future contexts where the rules will apply.[260]

Even represented participants face an uphill battle in fighting an enforcement action. For this reason, most defendants in FTC privacy enforcement actions settle with the Commission.[261] Challenging a statutory or regulatory rule is, as a general matter, even more difficult, requiring a constitutional challenge or overcoming *Chevron* deference to an agency's decisions.[262]

This lesson, thus, suggests a slight preference for case-by-case approaches to privacy over rulemaking approaches. But this lesson has more consequential implications for the types of consumer-facing privacy practices that companies ought to employ. That analysis is outside the scope of this example.

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[256] *See* Solove & Hartzog, *supra* note 247, at 619 (comparing FTC enforcement actions and decisions to other typical adjudicatory actions across the legal fields).

[257] *See id.* at 620 (noting that FTC decisions "lack precedential force," and the FTC is not required to be consistent in their decisions).

[258] *See* SCOTT, *supra* note 1, at 6 (noting that laws should continually be modified to benefit the public in a democratic society).

[259] *See* Solove & Hartzog, *supra* note 247, at 588 (explaining how FTC actions involve the Commission bringing actions against companies violating their privacy policies).

[260] Kerry & Morris Jr., *supra* note 254.

[261] *See* Solove & Hartzog, *supra* note 247, at 583.

[262] Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 865 (1984).

VII. CONCLUSION

Our world grows ever more legible to human and digital observation. This promises humans an ever-greater ability to shape the world to meet their needs. It also raises concerns about how humans might seek to shape each other. Scott's work contains deep insights about the use of and limits to legibility in pursuit of reshaping human societies.[263] As government regulators and tech platform leaders seek to address concerns raised by an ever more legible world, they should heed those insights. I have highlighted four lessons for anyone who would intervene in complex systems: minimize simplistic legibility; temper ambitious plans with prudence and humility; reduce the planner's ability to impose a plan; and increase the ability of participants to resist or shape such plans.[264] Those four lessons have broad application to today's technology policy questions. But *Seeing Like A State* also contains additional riches about legibility and governance that I hope academics, policy makers, and business leaders will continue to mine in our ever more legible world.[265]

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[263] *See* SCOTT, *supra* note 1, at 2 (arguing that legibility is a central problem in statecraft).

[264] *See generally id*. (noting that plans with aims of simplistic legibility often produce the opposite result).

[265] *See generally id*. at 2, 5, 11 (noting examples of how legibility goals are implemented across society and how it can be detrimental to statecraft).