ARTIFICIAL INTELLIGENCE SUBORDINATION: CONSEQUENCE OF THE FAILURE TO GOVERN

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ABSTRACT

This Article considers the impacts of the ongoing failure to govern artificial intelligence (AI) systems and uses for which humans are the computational and decisional subjects. Ungoverned AI systems and uses can have profound, devastating impacts upon those humans, their families and communities, and society at large. Because the law in its current state is grossly inadequate for the Algorithmic Age, these AI systems and uses threaten a digital form of AI-mediated involuntary servitude and subordination. This Article proceeds in three Parts. First, it discusses the scope of involuntary servitude and other forms of enslavement as they have evolved from the ratification of the Thirteenth Amendment to diverse and contemporary forms. Second, it considers the nature of what it means to be an increasingly digital person, and how data about people are used and owned, as property and input, for AI-driven systems of economic production within the public-private power conglomerate Apple CEO, Tim Cook, has decried as the Data Industrial Complex. Third, it theorizes that ungoverned AI results in conditions of AI-mediated subordination that may be seen as analogous to conditions in many systems of involuntary servitude and other forms of enslavement.

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INTRODUCTION

"That cable of tangled world lines is history. Seeing where it has been, it is clear where it is going—it is a matter of simple extrapolation."[1]

Artificial intelligence (AI) ventures are among the most richly funded ventures and are frequently courted for merger and acquisition. AI companies and global technology giants, through their remarkable AI innovations and applications, are creating a market poised to impart the same level of impact that electric light and power had on the Industrial Revolution. Valued at an estimated $27 billion, the global AI market is massive and is forecast to grow almost tenfold to roughly $267 billion by 2027.[2] North America accounted for a major share of the 2019 market, with the United States' portion equaling $11.4 billion alone.[3] Government spending on AI is also considerable; within the 2019 global AI market, government spending accounted for almost one-fifth of the market or $4.9 billion.[4] U.S. federal government spending accounted for a predominate share at more than one-fifth or $1.1 billion of the 2019 government AI market.[5]

Within the enormous AI market there are numerous types of AI[6] with increasingly numerous and beneficial ways to be used.[7] For example, the

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1.   KIM STANLEY ROBINSON, RED MARS 50 (Del Rey Mass Market ed. 2017).
2.   *Artificial Intelligence Market to Reach USD 266.92 Billion by 2027*, GLOBENEWSWIRE (May 7, 2021, 1:25 PM), https://www.globenewswire.com/news-re-lease/2021/05/07/2225220/0/en/Artificial-Intelligence-Market-to-Reach-USD-266-92-Billion-by-2027-Increasing-AI-Technology-Users-to-Spur-Market-Growth-Fortune-Business-Insights.html (discussing Fortune Business Insight's 2020 report, "Artificial Intelligence Market, 2020-2027"). This article expresses currency in U.S. dollars.
3.   *Id.*; *Artificial Intelligence in Government: Global Markets 2020–2025*, BUS. WIRE (Aug. 31, 2020, 1:28 PM), https://www.businesswire.com/news/home/20200831005637/en/Artificial-Intelligence-in-Government-Global-Markets-2020-2025---ResearchAndMarkets.com.
4*.   Artificial Intelligence in Government*, *supra* note 3.
5.   Ira Entis, *AI's True Benefit for Government*, FCW (July 31, 2020), https://fcw.com/articles/2020/07/31/comment-entis-ai-benefits-for-government.aspx.
6.   *See, e.g.*, Raj Ramesh, *What Is Artificial Intelligence? In 5 Minutes*, YOUTUBE (Aug. 13, 2017), https://www.youtube.com/watch?v=2ePf9rue1Ao.
7.   *See, e.g.*, AI FOR GOOD, https://aiforgood.itu.int/ (last visited Apr. 27, 2022) (offering details about online informational sessions that explore the many advantageous uses of AI).

U.S. Veterans Administration uses AI to predict the likelihood of service members' near-term death from the COVID-19 virus.[8] The computed risk of proximate death further informs physicians as they consider potentially more protective treatment protocols.[9] AI-for-good is not the focus of this Article[10] and neither is the focus the contrary that AI and AI uses are one hyperbolic, catastrophic trope.[11] Rather, this Article considers the use of AI systems that have the potential to deprive people of liberty, family, health, and home. Specifically, AI systems that have humans as computational subjects and use data about those people. This Article's examples generally draw from such AI uses by governments, which uses are outsourced to private sector companies, creating an unfettered combinatorial power structure that Apple CEO, Tim Cook, warningly calls the "Data Industrial Complex."[12]

There are serious concerns with these AI systems and their uses and two issues are principal among those concerns. First, despite AI operating within markets for decades,[13] AI governance and control laws are either too weak, too narrow, or are altogether absent.[14] Existing laws purportedly govern in AI contexts, but the vast majority have not been interpreted, applied, or otherwise contextualized for AI.[15] In addition, there have long

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8.   Mike Richman, *New VA Tool Uses Artificial Intelligence to Predict COVID-19 Patient Mortality*, U.S. DEP'T OF VETERANS AFFS. (June 28, 2021), https://www.research.va.gov/currents/0621-New-VA-tool-uses-artificial-intelligence-to-predict-COVID-19-patient-mortality.cfm.

9.   *See id.*

10.   *See, e.g.*, AI FOR GOOD, *supra* note 7.

11.   *See* Isabella Hermann, *Artificial Intelligence in Fiction: Between Narratives and Metaphors*, AI & SOC'Y, Oct. 5, 2021, at 2, 3 (discussing the distorted portrayal of AI in popular culture).

12.   Tim Cook, CEO, Apple Inc., Keynote Address Before 40th International Conference of Data Protection & Privacy Commissioners: Debating Ethics: Dignity and Respect in Data Driven Life, at 5:40 (Oct. 24, 2018), https://www.youtube.com/watch?v=kVhOLkIs20A. In his keynote address, Mr. Cook stated,

> Today that trade has exploded into a data industrial complex. Our own information, from the everyday to the deeply personal, is being weaponized against us with military efficiency. Every day, billions of dollars change hands, and countless decisions are made, on the basis of our likes and dislikes, our friends and families, our relationships and conversations, our wishes and fears, our hopes and dreams. These scraps of data, each one harmless enough on its own, are carefully assembled, synthesized, traded, and sold. Taken to its extreme, this process creates an enduring digital profile and lets companies know you better than you may know yourself.

Id.

13.   *See, e.g*, Kathleen Walch, *The Twenty Year History of AI at Amazon*, FORBES (July 19, 2019, 2:07 PM), https://www.forbes.com/sites/cognitiveworld/2019/07/19/the-twenty-year-history-of-ai-at-amazon/?sh=7ef34e7168d0; *Google Turns 20: How an Internet Search Engine Reshaped the World*, THE VERGE (Sept. 27, 2018, 8:52 AM), https://www.theverge.com/2018/9/5/17823490/google-20th-birthday-anniversary-history-milestones.

14.   There are some limited exceptions to this statement. For example, the U.S. Food and Drug Administration applies its medical device regulations to some devices that incorporate AI within them. *How FDA Regulates Artificial Intelligence in Medical Products*, PEW CHARITABLE TRS. (Aug. 5, 2021), https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2021/08/how-fda-regulates-artificial-intelligence-in-medical-products.

15.   *See* 24 C.F.R pt. 100 (2020); HUD's Implementation of the Fair Housing Act's Disparate Impact Standard, 85 Fed. Reg. 60,288, 60,290 (Sept. 24, 2020) (revising burden-shifting test for determining whether given practice, including use of risk predictive analytical systems, has unjustified

been needs for AI-numerate and AI-specific regulation considering frequent reports of AI bias, AI-mediated discrimination, and other harms resulting from ungoverned AI use.[16] Clinging to an absolutist narrative that regulation extinguishes innovation,[17] many elected and appointed to govern largely look the other way, adopting a laissez-faire position despite these AI-related injustices.[18]

The second concern is partly a consequence of the first—the legal vacuum that exists where AI law should be—and it presents a grave matter of social injustice. The people who are the subjects of, and exposed to, AI technologies and uses (often nonconsensually or illegally) are being injured at a perpetuating and propagating scale.[19] Their own AI-mediated injuries are but the beginning, however. The harms resulting from ungoverned use of AI cascade, resulting in devastating impacts on the injured's families and communities, and to the rule of law, civil society, and democracy as a whole.[20] Failing to meaningfully regulate AI technologies allows compounding toxic feedback loops to form which then corrode the rule of law and the protection it affords.[21]

This Article contributes the new view that unregulated AI system development and use may result in a digital form of AI-mediated involuntary servitude and subordination (collectively, AI subordination). Specifically,

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discriminatory effect). Addressing proposed defenses for showing an algorithm did not have a disparate impact, the Department of Housing and Urban Development stated,

> HUD has determined this alternative would provide some defendants the opportunity to justify predictive models. HUD expects that there will be further development in the law in the emerging technology area of algorithms, artificial intelligence, machine learning and similar concepts. Thus, it is *premature at this time to more directly address algorithms*.

Id. at 60,290 (emphasis added).

 16. *See, e.g.*, Tate Ryan-Mosley, *The New Lawsuit That Shows Facial Recognition Is Officially a Civil Rights Issue*, MIT TECH. REV. (Apr. 14, 2021), https://www.technologyreview.com/2021/04/14/1022676/robert-williams-facial-recognition-lawsuit-aclu-detroit-police/; Nizan Geslevich Packin & Yifit Lev-Aretz, *Learning Algorithms and Discrimination*, *in* RSCH. HANDBOOK ON THE L. OF A.I. 94–113 (Woodrow Barfield & Ugo Pagallo eds., 2018).

 17. The absolutist notion that regulation kills innovation is false. Witness the plethora of as-a-service models, social media, and mobile applications, for example. The huge boost in their market adoptions was fueled, in meaningful part, by the widespread implementation of cybersecurity innovations spurred into existence by the requirement that companies adopt and comply with reasonable security measures and other legal obligations. As offerings became more cybersecure, consumer confidence in those offerings increased, and that, in turn, fueled adoption and markets. *See, e.g.*, U.S. DEP'T OF COM., INTERNATIONAL CYBERSECURITY PRIORITIES: FOSTERING CYBERSECURITY INNOVATION GLOBALLY (2017), https://www.commerce.gov/sites/default/files/2018-06/International%20Cybersecurity%20Priorities%20Report.pdf. Trustworthy AI and the soft law and formal legal standards that require that trustworthiness will likewise drive adoption, markets, and even greater innovation. *See generally* NAT'L INSTITUTE OF STANDARDS & TECH., U.S. LEADERSHIP IN AI: A PLAN FOR FEDERAL ENGAGEMENT IN DEVELOPING TECHNICAL STANDARDS AND RELATED TOOLS (2019), https://www.nist.gov/document/report-plan-federal-engagement-developing-technical-standards-and-related-tools.

 18. *See, e.g.*, Joshua New & Daniel Castro, *How Policymakers Can Foster Algorithmic Accountability*, CTR. FOR DATA INNOVATION (May 21, 2018), https://datainnovation.org/2018/05/how-policymakers-can-foster-algorithmic-accountability/ (calling for limited regulation).

 19. *See* CATHY O'NEIL, WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATENS DEMOCRACY 20–31 (2016); discussion *infra* Part III.

 20. *See id.*

 21. *See, e.g.*, Sonia K. Katyal, *Private Accountability in the Age of Artificial Intelligence*, 66 UCLA L. REV. 54, 69, 77–94 (2019) (citations omitted); O'NEIL, *supra* note 19, at 5–8.

this Article constructs a logical relationship between identity and data, where one's personhood and indicia of that personhood are simply units of productive inputs for the AI market, much like people were once involuntary productive inputs for large-scale plantation farming.

The Article proceeds in three Parts. First, it considers the historical and subsequently evolved definition of involuntary servitude and other forms of enslavement. Second, the Article examines what constitutes a human person ("person") in the Algorithmic Age and how the the Data Industrial Complex exploits AI systems to turn people into property. Third, it presents the conditions of chattel slavery and draws parallels to the conditions of AI subordination.

This Article aims to reframe the role of government regulation of AI systems and uses, and particularly AI procured and employed by governments. It illustrates what is at stake: liberty, the rule of law, the innovation economy, and democratic institutions. By naming and demonstrating the dangers of AI-mediated enslavement, this Article hopes to inspire promulgation of informed, reasonable regulation of AI. Importantly, this Article aspires to foreclose the further subordination of people, this time in digital form.

I. INVOLUNTARY SERVITUDE AND OTHER FORMS OF ENSLAVEMENT

The Thirteenth Amendment to the U.S. Constitution was ratified in 1865.[22] It bans slavery and other forms of involuntary servitude, except for persons convicted of crimes:

> Section 1: Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

> Section 2: Congress shall have power to enforce this article by appropriate legislation.[23]

Further, since its 1948 inception,[24] article four of the Universal Declaration of Human Rights forbids slavery, involuntary servitude, and other slavery-like conditions: "No one shall be held in slavery or servitude . . . ."[25] Despite the law's universal disdain for involuntary servitude and other forms of slavery, the practice still has not been eradicated.[26] For example,

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22. *13th Amendment*, HISTORY (June 9, 2020), https://www.history.com/topics/black-history/thirteenth-amendment.

23. U.S. CONST. amend. XIII, §§ 1–2.

24. *See History of the Declaration*, U.N., https://www.un.org/en/about-us/udhr/history-of-the-declaration (last visited Apr. 27, 2022).

25. G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948).

26. *See* Off. of the High Comm'r for Hum. Rts., *Special Rapporteur on Contemporary Forms of Slavery, Including its Causes and Consequences*, U.N., https://www.ohchr.org/en/issues/slavery/srslavery/pagers/srslaveryindex.aspx (last visited Apr. 27, 2022); *International Standards: Special*

slavery is a widely continuing practice in Mauritania, despite having been ostensibly criminalized in 2007.[27] Still today, Mauritanian officials refuse to enforce the law.[28]

Enslavement in this historical and continuing sense is the keeping of individuals in a state of bondage or involuntary servitude by their subordination to another person due to the latter's absolute power over their life, liberty, and fortune.[29] Modern conceptions of slavery include chattel slavery and other forms of involuntary servitude, together with attendant trafficking and other crimes.[30] The U.S. Department of State defines slavery as compelled labor, including sexual labor, and transportation of trafficked persons to their places of enslavement.[31] That definition includes forced labor—including as secured by bondage for the trafficked persons' "debt" to the traffickers or the debt imposed on one's trafficked ancestors, including as domestic servants and child soldiers—and sex trafficking, including the trafficking of children as sex slaves.[32]

The United Nations (UN) holds an even broader definition, however. Beyond traditional slavery, the UN deems that other contemporary forms of involuntary servitude include "forced labour, debt bondage, serfdom, children working in slavery or slavery-like conditions, domestic servitude, sexual slavery, and servile forms of marriage."[33] Just as the conception of slavery has broadened beyond traditional slavery, the means of carrying out the trade likewise have modernized. Social media[34] and online platforms,[35] for example, are among the modern instruments of the capture, subjugation, and trade of the trafficked.[36]

Rapporteur on Contemporary Forms of Slavery, U.N., https://www.ohchr.org/EN/Issues/Slavery/SRSlavery/Pages/InternationalStandards.aspx (last visited Apr. 27, 2022) (listing treaties & international agreements prohibiting slavery in all its forms).

27. *See Mauritania Toughens Anti-Slavery Laws*, FREEDOM HOUSE (Aug. 13, 2015), https://freedomhouse.org/article/mauritania-toughens-anti-slavery-laws.

28. *See* John D. Sutter & Edythe McNamee, *Slavery's Last Stronghold*, CNN FREEDOM PROJECT, https://www.cnn.com/interactive/2012/03/world/mauritania.slaverys.last.stronghold/index.html (last visited Apr. 27, 2022) (estimating that 10% to 20% of Mauritania's 3.4 million people are enslaved as of 2012).

29. *Slavery*, BLACK'S LAW DICTIONARY, (11th ed. 2019).

30. *See What is Modern Slavery?*, U.S. DEP'T OF STATE, https://www.state.gov/what-is-modern-slavery/ (last visited Apr. 27, 2022).

31. *Id.*

32. *Id.*

33. Off. of the High Comm'r for Hum. Rts., *supra* note 26.

34. *See, e.g.*, Jon Gambrell & Jim Gomez, *Apple Once Threatened Facebook Ban Over Mideast Maid Abuse*, AP NEWS (Oct. 25, 2021), https://apnews.com/article/the-facebook-papers-maid-abuse-94909f43c725af09522704348e35bd25 (discussing Apple threatening to ban Facebook and Instagram from App Store over concerns they were being used as tools to trade and sell maids in the Middle East).

35. *See, e.g.*, Katie Terhune, *Local Craigslist Child Sex Sting Operation Nets 10*, KTVB7 (Mar. 23, 2018, 8:17 AM), https://www.ktvb.com/article/news/crime/local-craigslist-child-sex-sting-operation-nets-10/277-531055425.

36. *See id.*

II.   AI Subordination

AI subordination is a compelled form of labor effectuated by the un-regulated use of AI systems that focus on humans and use their data as inputs to AI production. To illustrate this concept, it is necessary to understand two things. First, the scope of what it means to be a human person in the Algorithmic Age must be properly conceived to encompass the increasing sphere of data that surrounds each person. Second, this broader, modern conception of a human person—once contextualized within AI systems and attendant technologies and uses—clearly establishes that people and their data are property and inputs for AI-driven production and the attendant growth of the capitalist economy.

A. What Is a Person?

What is a person? This ancient and perhaps unanswerable question is persistent. Conceptions as to what constitutes a person have slowly evolved over the course of human development and the development of human law.[37] In the past, boundaries were drawn to differentiate between the self and an extrinsic thing.[38] Here, however, the boundary that circumscribes personhood extends beyond the corporeal to the digital orbit encompassing data about the person.[39] The corporeal self, the flesh, comprises the minimum indivisible constituent of one person.[40] The confines of personhood and the notions of self extend beyond the physical body, however.[41] In a slow, steady march, the law has expanded its view from the corporeal self as person to something more intangible, but vital to personhood.[42] This unmistakable trend shows that personhood is becoming increasingly digital.[43]

Since 1785, courts in the United States have recognized that human persons are not restricted to their corporeal embodiment. In *Respublica v. De Longchamps*,[44] the Pennsylvania Supreme Court decided a case involving a heated exchange between the Chevalier De Longchamps and Francis Barbe Marbois, France's Consul General to the fledging nation, that resulted in one party striking the cane of the other.[45] At that time, although

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37.   *See* Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 961–65 (1982).

38.   *Id.* at 966.

39.   A digital orbit of data around a human being is in quantum greater than the digital exhaust of data that people "emit" through their online activities. *See* SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM 69–70 & fig. 1 (2019).

40.   Radin, *supra* note 37, at 963 n.18–20, 966 (stating that the body is "literally constitutive of one's personhood").

41.   *See id.* at 967.

42.   *See supra* Section II.A.

43.   *See* Janna Anderson & Lee Rainie, *Artificial Intelligence and the Future of Humans*, PEW RSCH. CTR. (Dec. 10, 2018), https://www.pewresearch.org/internet/2018/12/10/artificial-intelligence-and-the-future-of-humans/; *Cf.* DANIEL J. SOLOVE, THE DIGITAL PERSON: TECHNOLOGY AND PRIVACY IN THE INFORMATION AGE 60–61 (2004) (explaining how the tort of appropriation classifies one's likeness as a form of digital personhood).

44.   Respublica v. De Longchamps, 1 U.S. 111 (Pa. O. & T. 1784).

45.   *See id.* at 114–15.

the law of battery required contact with the victim's body, the Court[46] nonetheless held that cane-striking constituted a battery.[47] It rested its decision on international norms requiring respect for such diplomats; here, respect for the dignity of one's person.[48] *Respublica* recognized that the sphere of one's personhood extends beyond the physical body to inanimate objects attached to one's body. The Court imbued the object with the dignity afforded to persons, thus bringing the extension of the person within the protection of law.[49]

Since *Respublica*, the law has increasingly recognized that harm to individuals extends beyond the corporeal. For example, the tort of intentional infliction of emotional distress, which once required a physical-harm element, evolved to encompass a "zone of danger" extending beyond the body.[50] The Family Medical Leave Act and the Americans with Disabilities Act encompass nonneurotypical conditions affecting the mind and not merely physically observable conditions within the statutory definition of "disability."[51] Federal anticyberstalking law criminalizes the use of online communications that, among other aims, seeks to harass or intimidate an individual or cause them substantial emotional distress.[52]

Sir John Salmond[53] in his eminent treatise on jurisprudence wrote,

> So far as legal theory is concerned, a person is any being; whom the law regards as capable of rights or duties. . . . Persons are the substances of which rights and duties are the attributes. It is only in this respect that persons possess juridical significance, and this is the exclusive point of view from which personality receives legal recognition.[54]

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46.   *See id.* at 114–18; MÓSIEUR DE VATTEL, THE LAW OF NATIONS; OR, PRINCIPLES OF THE LAW OF NATURE, APPLIED TO THE CONDUCT AND AFFAIRS OF NATIONS AND SOVEREIGNS 466 (Joseph Chitty ed., 1883).

47.   Anthony J. Sebok, *Taking Tort Law Seriously in the Alien Tort Statute*, 33 BROOK. J. INT'L L. 871, 886 (2008) (citations omitted).

48.   *See* Sosa v. Alvarez-Machain, 542 U.S. 692, 717 n.11 (2004). The cane-striking in *Respublica* was a claimed offense to De Marbois' person, which represented his "master's person in the first degree." DE VATTEL, *supra* note 46, at 463–64. *See Sosa*, 542 U.S. at 716 (citing 21 JOURNALS OF THE CONTINENTAL CONGRESS 1136–37 (G. Hunt ed., 1912)).

49.   *Cf. Respublica*, 1 U.S. at 114–118 (explaining how Chevalier de Longchamps' actions inflicted grave harm upon the person of Francis Barbe Marbois and thus require severe punishment).

50.   *See, e.g.*, *Intentional Infliction of Emotional Distress*, 24 BUS. TORTS REP. 24, 25 (2011) (discussing *Consolidated Rail Corp. v. Gottschall*); Consolidated Rail Corp. v. Gottschall, 512 U.S. 532, 547–48, 554, 556 (1994); Metro-N. Commuter R.R. Co. v. Buckley, 521 U.S. 424, 430 (1997); Higgins v. Metro-N. R.R. Co., 318 F.3d 422, 428 (2d Cir. 2003) (Sotomayor, J., concurring).

51.   *See, e.g.*, U.S. Dep't of Labor, Wage & Hour Div., Opinion Letter (Jan. 14, 2013) (citations omitted).

52.   18 U.S.C. § 2261A(2) (2020). *See also* Tyler Newby, *Developments in Cyberstalking and Cyberharassment Law: What Attorneys Need to Know*, *in* THE IMPACT OF RECENT CYBERSTALKING AND CYBERHARASSMENT CASES: LEADING LAWYERS ON NAVIGATING PRIVACY GUIDELINES AND THE LEGAL RAMIFICATIONS OF ONLINE BEHAVIOR 1, 3–6, 2014 WL 1600592 (2014).

53.   *See generally* Diane Langmore, *Salmond, Sir John William (1862–1924)*, *in* 11 AUSTRALIAN DICTIONARY OF BIOGRAPHY (Geoffrey Serle, Christopher Cunneen, G. C. Bolton, K.J. Cable, R. J. O'Neill, J. R. Poynter, & Heather Radi eds., 1988), https://adb.anu.edu.au/biography/salmond-sir-john-william-8329 (last visited Apr. 27, 2022).

54.   JOHN W. SALMOND, JURISPRUDENCE OR THE THEORY OF THE LAW 275 (2d ed. 1907).

If Judge Salmond is correct, then it is the attachment of a right or duty that brings an aspect of a human being within the scope of personality cognizable by the law. Rights and duties attach to data about people and the corresponding "metadata."[55] The U.S. Federal Trade Commission, for example, applies its enforcement power to informational injuries that impact upon ephemeral aspects of consumers' personality, irrespective of whether those injuries are market-based.[56]

In *The Digital Person*, Professor Daniel Solove discusses the increasingly constant, pervasive, and deep data collection from and about individuals and the result: permanent digital dossiers on all.[57] Almost twenty years ago he cautioned that "we are only beginning to realize the extent to which our lives can be encompassed within [the] architecture" of the information age.[58] In the years since Professor Solove's insight, the trend to incorporate aspects of people's lives and digital persons into these architectures has continued to escalate as people increasingly carry out their lives online.[59]

Arguments presented about the personhood theory underlying the law's recognition of property rights relate closely to the theory of one's data and data about one as extending one's person.[60] A foundational view from Georg Hegel's personhood theory of property is that an object gives rise to a property claim upon one's insertion of one's will or personality into that object.[61] Margaret Radin's elaboration of personhood theory calls out the essential nature[62] of personal property as part of one's being, inseparably forming part of how people constitute themselves "as continuing personal entities in the world."[63] The closer the ties that one has to such irreplaceable indicia or components of one's personhood, the greater the law protects or should protect one's rights in them.[64]

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55. Metadata are "data about data." For example, location coordinates embedded within a digital image file are data about the image data thereby depicted. *See* Williams v. Sprint/United Mgmt. Co., 230 F.R.D. 640, 646 (D. Kan. 2005) ("[Metadata are] information about a particular data set which describes how, when and by whom it was collected, created, accessed, or modified and how it is formatted[.]").

56. *See* U.S. Fed. Trade Comm'n, FTC Informational Injury Workshop: BE and BCP Perspective 1 & n.1, 2–3 (2018), https://www.ftc.gov/reports/ftc-informational-injury-workshop-be-bcp-staff-perspective (visited Apr. 27, 2022) (providing examples from workshop participants' commentary such as embarrassment at disclosure of private medical information, doxing, and disengagement resulting from erosion of trust in businesses and markets).

57. *See* Solove, *supra* note 43, at 13–26.

58. *Id.* at 26.

59. *Id.* (as predicted by Solove); *see infra* Section II.B.

60. *See* Natalie M. Banta, *Property Interests in Digital Assets: The Rise of Digital Feudalism*, 38 Cardozo L. Rev. 1099, 1145–46 (2017) (citation omitted).

61. *Id.*

62. *See* Radin, *supra* note 37, at 972 ("Personal property is important precisely because its holder could not be the particular person she is without it.").

63. *Id.* at 959.

64. *Id.* at 959–61.

B. *People as Inputs to AI Production*

Under historical chattel slavery in the American colonies and early United States, Africans and people of African descent, and Indigenous people before them, were enslaved and forced to be inputs to massive-scale plantation[65] farms vital to the development of British capitalism and the economic growth of the British Empire.[66] The law of property was attached to those people to justify their abhorrent treatment and absolute subordination. Today, data are the essential input for all AI systems from system design and creation through use in production; similarly, property rights attach to those data. As argued in this Article's previous Section, the scope of human personhood encompasses people-as-data to which property rights are asserted under the law.[67] Thus, people constitute data production units—property to be bought, sold, licensed, and otherwise traded. People-as-data are ingested by AI systems as productive inputs for the Data Industrial Complex.[68]

This truth is borne out in government contracts transferring the "ownership" of people's data to AI system vendors, affirming outright that alleged ownership of people-as-data rests in those private companies.[69] For example, the Broward County, Florida sheriff's department acknowledged providing arrestee data to an AI risk-predictive system to determine arrestee risk scores and make detaining decisions. The department stated that they used the AI system through the vendor's online portal and that they no longer have access to the data or the portal. Presumably, the data now are now possessed solely by a private company.[70]

By merely existing in modern society, people produce enormous quantities of data about themselves, whether directly provided, captured as "data exhaust" from online social media activities, or mandatorily or surreptitiously collected.[71] In his visionary 1973 film work, *Television Delivers People*,[72] artist Richard Serra asserted, "It is the consumer who is consumed . . . . You are the end product. You are the end product delivered

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65.   *See, e.g.*, RALPH BETTS FLANDERS, PLANTATION SLAVERY IN GEORGIA 19 (1933).

66.   *See generally* ERIC WILLIAMS, CAPITALISM AND SLAVERY xi-xii (3d. ed. 2021).

67.   *See supra* Section II.A.

68.   *See* Cook, *supra* note 12; *see also* ZUBOFF, *supra* note 39, at 68–70 & fig. 1 ("digital exhaust").

69.   *See* Emile Loza de Siles, The Impossibility of Proof: State Legislation as Critical to Establishing Disparate Treatment by Artificial Intelligence 3–4 (June 7, 2021) (unpublished proposal in response to call for papers) (on file with author & Nevada Law Journal, University of Nevada, Las Vegas William S. Boyd School of Law).

70.   *See Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) – Code, Policies, Procurement, Financial, and Other Records (Allegheny County Court)*, MUCKROCK, https://www.muckrock.com/foi/broward-county-387/correctional-offender-management-profiling-for-alternative-sanctions-compas-code-policies-procurement-financial-and-other-records-allegheny-county-court-85019/ (last visited Apr. 27, 2022).

71.   ZUBOFF, *supra* note 39, at 68 ("data exhaust").

72.   *See* Annette Michelson, Richard Serra, & Clara Weyergraf, *The Films of Richard Serra: An Interview*, *in* RICHARD SERRA: INTERVIEWS, ETC. 1970–1980 93, 103–05, & figs.7a, b, c, d, e, & f (1980) (noting text from Serra's *Television Delivers People*).

en masse[.]"[73] In today's digital capitalist society marked by pervasive Internet and social media use[74] and complete, permanent alienation of people from their data, truer words were never spoken.[75]

III. CONDITIONS OF AI SUBORDINATION ANALOGIZED

This Article illustrates its thesis by summarizing some conditions associated with enslavement akin to conditions of AI subordination.[76]

Flowing from its now-rejected legal basis that people are property,[77] a number of consequent conditions characterize all or most systems of involuntary servitude and other forms of enslavement.[78] First, those profoundly subordinated people have little to no legal rights or protections. Among the rights denied them is the fundamental right to be paid for their labor[79] and the right to appeal to the courts for redress of harms done to them.[80] Because the enslaved have almost no access to justice, their "owners" may punish or kill them with impunity.[81] Second, enslaved people are silenced before the law, prohibited from giving testimony against their abusers and often against any free persons at all.[82] Even when their testimony is permitted, that testimony is greatly devalued before the law.[83] Third, in keeping with their legal impunity, "owners" have unlimited sexual rights to the enslaved.[84] Further, children born of sexual congress with an enslaved person are likewise enslaved, their status being heritable, usually from their mothers.[85] Fourth, "owners" control the mobility and assembly of people who are enslaved, and governments reinforce this

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73. *Id.* at 104 (quoting Annette Michelson reading the beginning text of Richard Serra's televised film work *Television Delivers People*) (emphasis added).

74. *See* Michael Rosenblum, *The Digital Slave - That Would Be You*, HUFFPOST (Dec. 6, 2017), https://www.huffpost.com/entry/the-digital-slave-that-wo_b_3222785.

75. *See* ROBERT HASSAN, THE CONDITION OF DIGITALITY: A POST-MODERN MARXISM FOR THE PRACTICE OF DIGITAL LIFE 160 (2020).

76. A complete comparative analyses or critique is beyond the scope of this Article.

77. *See, e.g.*, Dred Scott v. Sanford, 60 U.S. (19 How.) 393, 431 (1857) (enslaved party), *superseded by constitutional amendment*, U.S. Const. amend. XIV (discussing the sale of Dred Scott, his wife Harriet, and their daughters Eliza and Lizzie as slaves); *Id.* at 453 (concluding that Dred Scott was not a citizen and, thus, not entitled to law's protection and, consequently, was property under state law and thus a slave).

78. *See* Seymour Drescher & Paul Finkelman, *Slavery*, *in* THE OXFORD HANDBOOK OF THE HISTORY OF INTERNATIONAL LAW 890–91 (Bardo Fassbender & Anne Peters eds., 2012).

79. *See* Sebok, *supra* note 47, at 886 ("Slave labor is a form of false imprisonment, as is excessive detention."); *see* Raja Raghunath, *A Founding Failure of Enforcement: Freedmen, Day Laborers, and the Perils of an Ineffectual State*, 18 CUNY L. REV. 47, 53–54 (2014).

80. *See, e.g.*, *Dred Scott*, 60 U.S. at 423–25 (enslaved party) (discussing Le Grand v. Darnall, 27 U.S. 664 (1829)).

81. *See* Drescher & Finkelman, *supra* note 78, at 890–91 (noting, however, that the impunity of slave owners and their agents may not be completely without limits as some societies bar barbarous acts against slaves and may even require that slave owners treat slaves humanely).

82. *See id.*

83. *See id.* at 891.

84. *See, e.g.*, Adrien Katherine Wing & Sylke Merchan, *Rape, Ethnicity, and Culture: Spirit Injury from Bosnia to Black America*, 25 COLUM. HUM. RTS. L. REV. 1, 27 (1993).

85. Holly Brewer, *Salvery, Sovereignty, and "Inheritable Blood": Reconsidering John Locke and the Origins of American Slavery*, 4 AM. HIST. REV. 1038, 1045 (2017).

control.[86] Finally, governments reinforce and perpetuate enslavement in other systemically structural ways.[87] For example, governments may establish special courts and punishments specific to the enslaved,[88] laws to regulate the sale of the enslaved, and laws permitting the capture and return of fugitive enslaved to their "owners."[89]

This Article offers some illustrative instances in which conditions of AI subordination may be analogous to many conditions associated with involuntary servitude and other forms of enslavement.[90] Just as enslaved persons have very limited or no legal rights or protections, those exposed and subordinated to ungoverned AI systems have very limited or no legal rights or protections.[91] In the modern case of AI subordination, this condition accrues in part due to the absence of AI-informed law[92] and in part from the failure of existing laws to be contextualized for application to AI systems and their uses. The problem is compounded by the near-complete inaction (and, almost assuredly, a profound, pervasive lack of knowledge about technology) of policymakers, the bench, and the bar to interpret and apply laws in AI contexts.[93]

For example, illegal AI-mediated discrimination under a disparate impact theory may be provable. Proving intentional discrimination under a disparate treatment theory, however, as required by *McDonnell Douglas Corporation v. Green*[94] and its progeny,[95] may be impossible.[96] The "impossibility of proof" bar to disparate treatment claims results from the effects of a lack of transparency and accountability cemented through AI vendors' contract terms, procurement and contracting abuses by governments in cooperation with vendors, and stonewalling by AI vendors to discovery requests under false trade secret protections.[97]

Further, the AI subordinated have very limited or no ability to appeal to formal legal institutions for redress of harms. In an almost completely

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86.   *See, e.g.*, *Dred Scott*, 60 U.S. at 421 (enslaved party) (discussing the charter of the City of Washington in 1820).

87.   *See* Drescher & Finkelman, *supra* note 78, at 890–91.

88.   *See id.* at 891.

89.   *See id.*

90.   *See id.* at 890–91.

91.   *See, e.g.*, Gregory S. Nelson, *Bias in Artificial Intelligence*, 80 N.C. MED. J. 220, 220–21 (2019) (explaining that ungoverned AI may fail to protect the legal rights of individuals by perpetuating bias).

92.   Eileen Donahoe & Megan MacDuffee Metzger, *An Intelligent Human Rights Agenda for Artifical Intelligence*, POWER 3.0 (April 23, 2019), https://www.power3point0.org/2019/04/23/an-intelligent-human-rights-agenda-for-artificial-intelligence/.

93.   *See, e.g.*, Stanley Greenstein, *Preserving the Rule of Law in the Era of Artificial Intelligence (AI)*, A.I. & L., June 24, 2021, at 1–2 (stating that certain AI systems are too complex for the law to a certain degree).

94.   McDonnell Douglas Corp. v. Green, 411 U.S. 792, 800–02, 807 (1973).

95.   *See, e.g.*, Vill. of Arlington Heights v. Metro. Hous. Dev. Corp., 429 U.S. 252, 264–65 (1977); Price Waterhouse v. Hopkins, 490 U.S. 228, 261–64 (1989) (O'Connor, J., concurring).

96.   *See* Loza de Siles, *supra* note 69, at 3.

97.   *See id.* at 3–4.

black-boxed[98] example, the U.S. Social Security Administration uses an AI system to "read" draft administrative law judge (ALJ) decisions. The AI review results in potential revisions to claimant-favorable decisions and benefit denial decisions that are difficult to appeal.[99] Due to AI, a number of people entitled to disability benefits, as preliminarily determined by skilled, human ALJs, never receive the favorable order granting benefits and thereby are not granted benefits.[100] Instead, unbeknownst to the claimants that are disabled, who are unknowingly AI subordinated, the ALJs' decisions are effectively appealed through reexamination by a higher AI authority.[101] Benefits are denied, but only after this "*machina ex parte*" appeal is carried out.[102] The claimant who is disabled, subordinated by the AI system, has no part in this appeals process.[103]

As mentioned, enslaved status may be heritable, and an analogous condition exists in AI subordination. For example, the risk scores for a child subject of a child-welfare-risk AI system, or a juvenile subject of a violence-risk-predictive AI system, depend in significant part upon the data associated with the child or juvenile's parents, household members, and friends.[104] Therefore, if a parent, for example, has contact with police—even unwarranted contact or contact that does not result in arrest—then those data pass from pertaining to the parent to then pertaining to the juvenile.[105] For a nonwhite juvenile, those data are already contaminated with the biases that result in overpolicing of neighborhoods with high concentrations of Black, Brown, immigrant, and poor persons.[106] The juvenile subjects inherit their status in the AI system from their family members, schoolmates, associates, and neighbors.[107] Consequently, this inherited status elevates the juvenile's risk score and that, in turn, can

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98.   Here, the term "black box" refers to a usage or "system whose workings are mysterious; we can observe its inputs and outputs, but we cannot tell how one becomes the other." FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION 3 (2015).

99.   *See* AI Use Case: AI in Federal Social Security Disability Applications and Appeals (Feb. 7, 2021) [hereinafter AI Use Case] (unpublished student experience report in Artificial Intelligence & Social Justice course) (on file with author).

100.   *See* AI NOW INST., LITIGATING ALGORITHMS: CHALLENGING GOVERNMENT USE OF ALGORITHMIC DECISION SYSTEMS 7 (2018); AI Use Case, *supra* note 99.

101.   Kurt Glaze, Daniel E. Ho, Gerald K. Ray, & Christine Tsang, *Artificial Intelligence for Adjudication: The Social Security Administration and AI Governance*, *in* HANDBOOK ON AI GOVERNANCE (forthcoming) (manuscript at 3, 14–15) (stating the Social Security Administration (SSA) Disability Program uses AI to help its judges and attorneys make core adjudicative decisions).

102.   *See* AI NOW INST., *supra* note 100; AI Use Case, *supra* note 99. *Machina ex parte* meaning *ex parte* proceedings carried via the machine, i.e. the AI, without the involvement of the applicant party.

103.   AI Use Case*, supra* note 99.

104.   *See* Stephanie K. Glaberson, *Coding Over the Cracks: Predictive Analytics and Child Protection*, 46 FORDHAM URB. L.J. 307, 332–33 (2019).

105.   *See* AI NOW INST., *supra* note 100, at 3, 13–14 (referencing challenge on *Daubert* grounds by juvenile exposed to Washington, D.C. court's use of the Violence Risk Assessment system); Packin & Lev-Aretz, *supra* note 16, at 109–10.

106.   *See* AI NOW INST., *supra* note 100, at 13. Some overpolicing is itself the result of uses of predictive policing AI systems, because they are notoriously tainted by historical racial and other biases. *See* Glaberson, *supra* note 104, at 344; Packin & Lev-Aretz, *supra* note 16, at 109–11.

107.   *See supra* notes 103–04 and accompanying text.

result in the forfeiture of liberty, education opportunities, and even the erasure of adolescence when that risk score results in placement in an adult detention or correctional facility.[108]

Other analogies between the conditions of enslavement and those of AI subordination may be drawn. This Article offers this sample of analogies to argue that the law must address AI subordination and to reinterpret and reform the law to protect human persons against the dangers posed.

IV. AI LEGAL REFORMATION

To stop AI subordination, the existing law must be interpreted and applied to AI systems and uses and, where AI protective laws do not exist, new laws must be established.

The White House Office of Science and Technology Policy (OSTP) recently proclaimed a need for an AI bill of rights.[109] The OSTP is beginning to gather policy input as to what an AI bill of rights might protect.[110] My recent recommendations to OSTP officials were that an AI bill of rights would be supported by the Constitution, but should go beyond the existing Bill of Rights in the First through Tenth Amendments.[111] To be fully grounded within the Constitution, an AI bill of rights should be brought within the reach of at least Amendments One, Four through Eight, Thirteen, and Fourteen.[112] Further, to provide the Courts with the ability to address, for example, the impossibility of proof problems in AI-mediated disparate treatment claims, a digital civil rights act is needed to amend the Civil Rights Act of 1964[113] and its companion acts.[114] Despite the departure of its director earlier this year,[115] the OSTP is making good

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108.   *See* AI NOW INST., *supra* note 100, at 13.

109.   *See* Eric Lander & Alondra Nelson, *Americans Need a Bill of Rights for an AI-Powered World*, WIRED (Oct. 8, 2021, 8:00 AM), https://www.wired.com/story/opinion-bill-of-rights-artificial-intelligence/.

110.   *Id.*

111.   *See* Emile Loza de Siles, Recommendations for AI Bill of Rights Legislative Agenda to White House Office of Science and Technology Policy (Dec. 1, 2021) (on file with author). A discussion of the rationale for proposing that an AI Bill of Rights address the Constitutional principles in these amendments is reserved by the author for future work.

112.   *Id.*; U.S. CONST. amends. I, IV–VIII, XIII–XIV. A discussion of the rationale of these specific amendments is beyond the scope of this article and is reserved by the author for future work.

113.   Civil Rights Act of 1964, Pub. L. No. 88–352, 78 Stat. 241.

114.   *E.g.,* Voting Rights Act of 1965, Pub. L. No. 89–110, 79 Stat. 437; Fair Housing Act of 1968, Pub. L. No. 90–284, 82 Stat. 73.

115.   *See* Will Thomas, *Science Advisor Eric Lander Resigns in Disgrace*, AM. INST. OF PHYSICS (Feb. 8, 2022), https://www.aip.org/fyi/2022/science-advisor-eric-lander-resigns-disgrace; *but see* Nichols Martin, *White House Appoints Alondra Nelson to Perform Duties of OSTP Director*, EXEC.GOV. (Feb. 17, 2022), https://executivegov.com/2022/02/alondra-nelson-named-ostp-acting-director/; Jeffrey Mervis, *Arati Prabhakar set to Become Biden's Science Adviser and his Pick to Lead Science Office*, SCIENCE (June 13, 2022, 3:00 PM), https://www.science.org/content/article/arati-prabhakar-set-become-biden-s-science-adviser-and-his-pick-lead-science-office.

progress toward the civil and human rights protections contemplated within its AI bill of rights initiative.[116]

Indeed, OSTP's efforts are gaining the attention of the federal legislature. Representative Anthony Brown of Maryland very recently introduced the Digital Civil and Human Rights Act of 2022 to contextualize and render enforceable the protections of the 1964 Civil Rights Act in this Algorithmic Age.[117] Efforts like the proposed federal Algorithmic Accountability Act of 2019, its newly reintroduced 2022 version, and, for example at the state legislative level, proposed California Assembly Bill Number Thirteen,[118] look to bring AI designs, uses, and risks under the rule of civil rights and consumer protection law, although those are thus far inadequate to protect people against AI subordination.[119] State laws to ensure meaningful government transparency and accountability in face of the Data Industrial Complex's effectuation of AI subordination,[120] however, seem beyond most legislatures' current purview.[121] Thus, the elimination of some of the most fundamental conditions of AI subordination seem untimely at best and unlikely at worst. Other works address the barriers to AI governance and suggest multipronged approaches for legislators and regulators to expedite the establishment of technologically informed, effective AI laws.[122]

CONCLUSION

Through this comparative framing of the conditions of enslavement and analogous conditions under ungoverned AI, this Article sounds an alarm about the dangers that are emerging through the AI subordination of people. These dangers, left unrecognized and unchecked, aim at the very heart of humanity, liberty, and equality under the law. Governments and private-sector actors, particularly when operating in concert, should not be

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116.   *See, e.g.*, White House Office of Science & Technology Policy and National Science Foundation, *Request for Information (RFI) on Implementing Initial Findings and Recommendations of the National Artificial Intelligence Research Resource Task Force*, 87 Fed. Reg. 31914, 31915 (e) (May 25, 2022) (referring to privacy, civil rights, and civil liberties requirements in Chapter 6 of the Task Force's report), https://www.federalregister.gov/documents/2022/05/25/2022-11223/request-for-information-rfi-on-implementing-initial-findings-and-recommendations-of-the-national.

117.   Digital Civil and Human Rights Act of 2022, H.R. 7449, 117th Cong. (2022).

118.   Algorithmic Accountability Act of 2019, H.R. Res. 2231, 116th Cong. (2019); Algorithmic Accountability Act of 2022, H.R. Res. 6580 (2022)**;** Automated Decision Systems Accountability Act, S. Res. 13, 2021–2022 Leg., Reg. Sess. (Cal. 2021).

119.   H.R. 2231; Cal. S. Res. 13; *see* discussion *supra* pp. 3–5.

120.   *See Legislation Related to Artificial Intelligence*, NCSL (Jan. 5, 2022), https://www.ncsl.org/research/telecommunications-and-information-technology/2020-legislation-related-to-artificial-intelligence.aspx.

121.   The scope of the majority of state legislation is focused on studying the impact AI algorithms, not curtailing any specific area of use. Additionally, the majority of proposed legislation has not been enacted. *See id.*

122.   *See* Emile Loza de Siles, *Artificial Intelligence Bias and Discrimination: Will We Pull the Arc of the Moral Universe Toward Justice?*, 8 J. INT'L & COMPAR. L. 513, 514 (2021); *see generally* Emile Loza de Siles, *AI Governance Now*, FORDHAM URB. L. J. (Nov. 22, 2021), https://news.law.fordham.edu/fulj/2021/11/22/ai-governance-now/; Emile Loza de Siles, *Soft Law for Unbiased and Non-Discriminatory Artificial Intelligence*, 40 IEEE TECH. & SOC'Y MAG. 77 (2021) (Special Issue on Soft Law Governance of Artificial Intelligence).

allowed to continue to use and abuse ungoverned AI systems to operate upon people as subjects. The law must address AI subordination immediately to ensure social justice in the Algorithmic Age and to prevent an irremediable refrain of the harms of mass subordination by AI-mediated means.