

Defending the Right to Repair

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Access to repair information is an essential aspect of an effective right to repair. Yet repair manuals that used to be standard with one's product purchase have gradually disappeared, and intentionally so. Manufacturers argue that products are too complicated to allow self-repair, citing safety concerns.¹ While it is true that products have become more complicated in today's "tethered economy," safety concerns are only part of the reason behind blocking repair. Another reason is that funneling repairs to an authorized repairer can mean big business for some manufacturers—or may mean converting the consumer's desire for repair into an upgrade purchase of the newer version of the product.

There is another hurdle to accessing repair information: copyright law, which provides manufacturers with the ability to claim copyright protection over manuals and block access to repair information. In addition, the Digital Millennium Copyright Act ("DMCA"), gives manufacturers the legal right to block access to their products through software locks (also known as technological protection measures, or TPMs).² Under the DMCA, circumventing or "hacking" these software locks can be deemed a criminal offense.³ While the Copyright Office has recently made hacking for repair purposes exempted from liability,⁴ it is still illegal for those who have hacked the lock to share the information under what is known as the anti-trafficking provision, thus limiting the universe of those who can access their products for repair purposes to tech-savvy and entrepreneurial consumers.⁵

There are various convincing justifications for a broad right to repair. While we have previously argued that a right to repair is theoretically compatible with intellectual property protection, this chapter applies feminist legal theory to this issue.

Feminism, as a movement to end all forms of oppression, provides further support for expanded exemptions to the DMCA. Even with limited exemptions currently in place, classism and imperialism are sustained due to an unrealized ability to repair through higher cost and burdensome repair, which also results in e-waste generated by wealthy countries that flows into poor and developing countries.⁶ Empowering consumers to utilize third-party repairers and share repair-related information will assist in alleviating these forms of oppression.

REPAIR, COPYRIGHT LAW, AND THE DMCA

The right to repair is having a global moment. Worldwide, the social movement to push governmental change to allow independent repair of products ranging from the everyday (e.g., smartphones) to the extraordinary (e.g., smart cars) is making progress. In the United States, some states have enacted or updated consumer protection laws that provide certain rights to facilitate repair,⁷ while the Federal Trade Commission (“FTC”) has brought actions against manufacturers who make illegal claims that non-authorized repair voids a product’s warranties.⁸ In Europe, the European Commission adopted in 2019 a new set of EcoDesign regulations under the framework of the EcoDesign Directive, which included repair-related provisions with respect to ten categories of products.⁹ And in Australia, the Productivity Commission issued a “Right to Repair” report, which made several policy recommendations to enable repair in Australia.¹⁰ But despite this progress, challenges to implementing a universal right to repair remain.

A thread that runs throughout the challenges to repairing products outside of a manufacturer’s authorized network is the lack of access to information. In the early days of consumer electronic goods, when one purchased a consumer product—for example, a television—a repair manual with the full schematics typically accompanied the purchase.¹¹ Over time, this repair manual has disappeared and increasingly less information on self-repair has been provided. Some manufacturers made it virtually impossible to obtain any access to repair information, such as Apple in the 2010s.¹²

Unfortunately, manufacturers have a legal ability to bar access to this information through copyright law. Manufacturers routinely claim copyright protection in their manuals, where those manuals have escaped their authorized channels and have appeared online without their consent.¹³ Even during the pandemic, a website database dedicated to publishing manuals to repair lifesaving medical devices received a cease-and-desist letter predicated on the manufacturer’s copyright protection.¹⁴

Without access to information regarding how to repair one’s product, only those consumers who are tech-savvy and entrepreneurial are able to figure it out on their own—but copyright law makes even this illegal.¹⁵ The Digital Millennium Copyright Act (DMCA) was enacted in 1998 to update and modernize US

copyright law in response to the challenges presented by digital technologies and the internet.¹⁶ The DMCA provides protection for TPMs or digital locks (referred to in the DMCA as “a technological measure that effectively controls access to a work protected under [Copyright Law]) used by copyright owners to control access to their copyrighted works.”¹⁷ These locks are used by manufacturers of electronic devices to bar access to the product’s software that controls how it functions. Access to this software is often needed to repair the product.¹⁸ So even if an enterprising do-it-yourselfer (“DIYer”) is able to figure out how to bypass the lock (commonly referred to as “hacking”), the DMCA prohibits this and even may provide for criminal liability in certain situations.¹⁹

Fortunately, the DMCA authorizes the Copyright Office to promulgate exceptions based on the recommendations of the Library of Congress.²⁰ These “Section 1201 Promulgations” are issued by the Copyright Office on a three-year cycle and provide exemptions from DMCA liability for various types of activity that would otherwise be considered infringing.²¹ As early as 2018, the Copyright Office has included exemptions that recognize that hacking into one’s product for purposes of repairing it is not an infringement of the DMCA.²² But, this exemption is only limited to one part of the DMCA’s protection of digital locks—the act of circumventing (or hacking) the digital lock.²³ The exemption does not extend to the anti-trafficking part of the DMCA, which prohibits anyone from distributing the information related to bypassing the digital lock (referred to in the DMCA as “anti-trafficking”). The reason that the Copyright Office has not extended the exemption to anti-trafficking is because it is not authorized to do so.²⁴

We have argued in previous work that theories that justify intellectual property law also support a right to repair.²⁵ Consider, for example, the utilitarian notion of intellectual property rights as a governmental tool to bargain for the development and disclosure of socially valuable information.²⁶ The DMCA was enacted as an additional form of protection for digital products that were easily copied, in keeping with this incentive rationale.²⁷ Anti-circumvention measures allow manufacturers to safely release their copyrighted works for consumption because the digital locks protect against the copying of copyrighted works that are embedded in a product.²⁸ For example, a digital lock placed on a DVD, a music file, or software protects it from being illegally copied.²⁹ But, with most products these days controlled by software, such software locks are protecting access to the products themselves—and not just the copyrighted software.³⁰ The Copyright Office exemptions are adopted in recognition of this development. Therefore, while disabling the lock is generally a violation of the DMCA, it is not a violation to so disable it for purposes of repairing the underlying product.³¹ The same rationales also seem to support extending the DMCA exemption to cover the dissemination of repair information (“trafficking”).

In this contribution, the authors highlight another theoretical frame that provides support for a right to repair: feminism. As conceptualized by scholar Amanda

Levendowski (relying on bell hooks' definition of feminism), "intersectional feminism" extends the feminist movement to all parts of society, seeking to end multiple forms of oppression.³² Professor Levendowski's conceptualization of "feminist fair uses" of copyrighted works promotes accessibility of information, one of the ways women have long utilized to end their oppression.³³ The authors argue that intersectional feminism, with its goal of ending all forms of oppression, also provides strong support for measures that would end forms of oppression that are furthered through preventing self or independent repair of one's products, including an expansion of the DMCA exemption.³⁴ Among other things, the inability to repair products has led to pileups of discarded electronic products in developing countries, such as Brazil, Ghana, Mexico, and Nigeria.³⁵ This has created a form of imperialistic oppression, since North America and Europe are the countries from which this electronic waste (e-waste) originates.³⁶ Providing greater accessibility to repair would assist in alleviating this oppression. In addition, the inability to repair products leads to the continuation of classism—that is, only the wealthy are able to afford to upgrade their products when they break, whereas the poor must muddle on with products that are semi-functioning.³⁷ Greater ability to access low cost alternatives to repair would assist in fighting back against this classism. Ultimately, this chapter argues that a "feminist right to repair" would provide further support for expanding the repair exemptions to allow for third party repair and the distribution of repair-related information.

OPPRESSION THROUGH LIMITING ACCESS TO INFORMATION

There are many strands and movements within feminism, but a connecting thread is the fight against the oppression of women in society, albeit white, privileged women.³⁸ It was in the 1980s with the writings of bell hooks that the scope of feminism was expanded to be defined as "a movement to end sexism, sexist exploitation, and oppression."³⁹ And, in recognizing that racism, classism, and imperialism were other forms of oppression, includes these within her definition of feminism.⁴⁰ Further, "intersectionality feminism" brings these strands together to recognize that oppressed people can experience various forms of inequality and oppression at the same time—and differently—from one another.⁴¹

hooks defines oppression as "the absence of choices."⁴² Given this, one way to end oppression is to be able to provide choices to the oppressed—or access. Access, or "the ability to enter" or the "freedom or ability to obtain or make use of something" can be to resources (like money), information, or knowledge more generally (i.e., education).⁴³ As Professor Levendowski points out in her chapter, *Feminist Use*, access to free information was recognized early on by feminist movements.⁴⁴ Women's associations were the ones to establish close to three-quarters of the early American public lending libraries.⁴⁵

In the modern age, copyright owners are gatekeepers to knowledge and information, such as books, magazines, news articles, documentaries, and on and on, and they want to be paid for such information. This is the “bargain” of copyright that was mentioned earlier, but at the same time, can be seen as the tool of oppression.⁴⁶ Where copyright owners believe they have been shortchanged, they can bring a lawsuit (or even just threaten to bring one, which is often just as good).⁴⁷ This was seen, for example, in *Kirtsaeng v. John Wiley & Sons, Inc.*, where the copyright owner brought a lawsuit against a graduate student who imported textbooks that had been lawfully sold in his homeland of Thailand.⁴⁸ The enterprising graduate student took advantage of the price difference between the cost of the textbooks in Thailand and in the United States, reselling them in the United States to make a profit. The copyright owner believed that it should have been their profit to make and not the student’s.⁴⁹

In the digital age, copyright owners continue their gatekeeping function through the use of digital locks (often referred to as technical protection measures or “TPMs”) and are aided by Section 1201 of the DMCA in keeping control over access to information.⁵⁰ This includes information related to repair, such as repair manuals, schematics, as well as the information to bypass the digital locks that secure access to the underlying products. Manufacturers claim copyright protection in this information and are not shy in enforcing them, even during a pandemic.⁵¹ In allowing copyright owners to maintain control over repair-related information, the DMCA supports the oppression of those who live in poverty (classism) and in developing countries (imperialism).

Classism. The definition of classism, is “the systemic oppression of the lower class and middle class to the advantage of the upper class.”⁵² A lack of access to repair information sustains classism because only the wealthy can afford to routinely purchase new products when theirs break. Combined with some manufacturers’ “planned obsolescence” programs, some products are designed to break down sooner than others.⁵³ For example, Apple has published the lifecycle expectancies of its iPhones, which is approximately three years.⁵⁴

Even where a consumer (wealthy or not) wishes to have their product repaired instead of purchasing a new one, there are barriers that make it burdensome, even aside from a lack of information needed for self-repair. Some manufacturers require that some repairs be undertaken only by them, which adds additional burdens or makes repairs impossible.⁵⁵ Authorized repairers are often more expensive than independent repairers, as well as less conveniently located.⁵⁶ And end user license agreements accompanying software embedded in many products can restrict repairs to authorized repairers.⁵⁷ During the FTC’s workshop held on repair restrictions, Vermont State Senator Christopher Pearson testified that he was told by Apple to mail in his iPhone when the camera broke because, “according to Apple, nobody in Vermont could fix it.”⁵⁸ This meant that he could not fix his phone because he was using his phone to run his business and a week without

his phone was a “nonstarter.”⁵⁹ In all, making it more difficult to repair products has the effect of sustaining the oppression of those with fewer resources.

Imperialism. The combination of planned obsolescence and lack of repair means that electronic waste (referred to as “e-waste”) is being generated at an increasing rate, from an average of 0.6 million tons per year (from 2018 to 2021) to over an estimated average of 2 million tons per year after 2021.⁶⁰ While this is a global problem, when one examines the flow of e-waste, it can be seen as a form of modern-day imperialism. The countries that generate the most amount of e-waste are located in North America, Western Europe, and Australia, whereas the countries that receive the most amount of e-waste for disposal are Mexico, Brazil, India, and China.⁶¹ This seems to embody the definition of imperialism, which is the practice “of extending the power and dominion of a nation . . . by gaining indirect control over the political or economic life of other areas.”⁶²

E-waste is extremely harmful in many aspects. Over 80 percent of e-waste is not collected for recycling.⁶³ And even where e-waste is recycled, recycling of some types of e-waste is dangerous, with e-waste containing hazardous chemicals.⁶⁴ In places where the recycling consists of burning the plastic material around the electronic good in order to obtain the valuable metal inside of them, such processes expose the workers and their community around them to a multitude of toxic substances.⁶⁵ More troubling is that in some countries, women and children make up to 30 percent of those employed in these types of recycling facilities, which have long-term consequences.⁶⁶ These have included “thyroid function, reproductive health, lung function, growth, and changes to cell functioning.”⁶⁷ In addition, one systematic review of a number of global studies of e-waste and health outcomes found that “[p]eople living in e-waste recycling towns or working in e-waste recycling had evidence of greater DNA damage than did those living in control towns.”⁶⁸ This means that the damage done by e-waste will last long beyond the current generation of those living and working in these areas. Developed and wealthy countries are oppressing developing countries through their e-waste, and even if all e-waste shipments were to stop tomorrow, the half-life of these toxic substances would still be felt in generations to come.

TOWARD A FEMINIST RIGHT TO REPAIR

The values underpinning the right to repair movement are feminist values. Repair-related information is power, and access to this information can assist in limiting the classist and imperialistic oppression that the lack of such information sustains.⁶⁹ A feminist right to repair provides support for expanding the exemptions provided under Section 1201 of the DMCA to third-party repair and in allowing the distribution of repair information and devices. The question remains, though, as to how these additional exemptions can be obtained, as well as how manufacturers can be compelled to release repair information.

The right to repair movement in the United States has been working to pass state-based legislation that would assist with the latter part.⁷⁰ In 2022, the movement saw some success, with New York State being the first to pass a right-to-repair law covering digital consumer products.⁷¹ But the law was narrowed upon the governor's signing. For example, while the law requires manufacturers to make available repair information to independent repairers, it only requires it *if* manufacturers already make such information available to their network of authorized repairers.⁷² Also in 2022, Colorado passed a right to repair law focused solely on wheelchairs.⁷³ Even though these two laws are somewhat more narrow than was advocated, it is still seen as a step in the right direction by some repair advocates.⁷⁴ Continued advocacy and lobbying persists in other states to attempt passage of similar, or even broader, legislation.⁷⁵

Additionally, efforts are underway to pass repair legislation at the federal level. During the 2021–2022 session,⁷⁶ pro-repair bills were introduced in both the House and Senate, but none of the bills moved beyond being assigned to committees.⁷⁷ In addition, the “Freedom to Repair Act of 2022” was introduced in the House and would have amended Section 1201 of the DMCA to permanently exempt from Section 1201 repair-related circumvention and trafficking.⁷⁸ This, too, did not make it beyond being assigned to the House Judiciary Committee, despite advocacy to call for a hearing.⁷⁹ With the 118th Congressional Session beginning in January 2023, repair bills will need to be reintroduced. To date, H.R. 906 is the first bill introduced related to repair, but focuses on automobiles.⁸⁰

More promising, though, is that self-regulation within the industry appears to be closer for electronic products. If companies would voluntarily allow consumers and independent repairers to have access to repair information and share it freely, it could mean that neither state nor federal legislation is needed in the short term.⁸¹ There are signs that manufacturers themselves are looking into repair options for their products. For example, Google and Samsung have begun to sell some of their phone components on a repair platform, iFixit.⁸² Apple began a self-repair service in 2022,⁸³ although the initial roll out has not gone smoothly.⁸⁴ Both the cost and complexity of the tools and parts needed led to some headlines such as “Apple Shipped Me a 79-Pound iPhone Repair Kit to Fix a 1.1 Ounce Battery.”⁸⁵ The sub-headline to this article was “I’m starting to think Apple doesn’t want us to repair them.”⁸⁶ These articles were released in the early rollout days of the program, and it will likely take time to make self-repair more accessible, but as with the New York State and Colorado legislation, it is a step in the right direction.

Another promising sign is that other technology companies have started studying the issue, with Microsoft bowing to shareholder pressure in 2021 to complete an internal study by 2022 on how to better provide access to repair parts and information.⁸⁷ Microsoft released the report in May 2022, which concluded that “all forms of repair offer significant greenhouse gas (GHG) emission and waste reduction benefits.”⁸⁸ In releasing the report, it was reported that

“Microsoft will continue to use these findings to expand the availability of certain parts and repair documentation beyond Microsoft’s Authorized Service Provider (ASP) network, as the company has recently begun, and initiate new mechanisms to enable and facilitate local repair options for consumers. . . .”⁸⁹ Like with Google and Samsung, Microsoft has been selling some of its parts for the Surface device on iFixit.⁹⁰ However, relying on corporate benevolence to grant consumers the right to repair their own devices means that consumers must trust that the same corporations that prevented access to information previously will not, once again, change their minds.

CONCLUSION

These efforts underscore that consumers, as well as politicians and corporations, are advocating for a right to repair.⁹¹ The momentum appears to be heading in the direction of allowing consumers to have the information to either effectively self-repair or choose to utilize an independent repairer.

The Section 1201 DMCA repair-related exemptions as promulgated by the Copyright Office in 2021 have paved the path for self-repair.⁹² But even with these limited exemptions currently in place, anti-feminist oppression, in the forms of classism and imperialism, are sustained due to an unrealized ability to repair through higher cost and burdensome repair, as well as the e-waste generated by wealthy countries that flows into poor and developing countries. A feminist right to repair recognizes how the movement aligns with feminist values and empowers consumers to combat these forms of oppression by being able to utilize third-party retailers and sharing repair information publicly.

NOTES

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1. See FTC, *NIXING THE FIX: AN FTC REPORT TO CONGRESS ON REPAIR RESTRICTIONS* 27 (May 2021), https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

2. 17 U.S.C. §1201(a)(1)(A), (2) (2022). (“§1201 Circumvention of copyright protection systems (a) Violations Regarding Circumvention of Technological Measures.—(1)(A) No person shall circumvent a technological measure that effectively controls access to a work protected under this title. . . .”)

3. 17 U.S.C. §1204.

4. See 80 Fed. Reg. 65944, 65954 (Oct. 28, 2015). See also USC Gould School of Law, USC Intellectual Property & Technology Law Clinic, Petition for Proposed Exemption Under 17 U.S.C. §1201 (Nov. 3, 2014), https://cdn.loc.gov/copyright/1201/2014/petitions/USC_IP_and_Technology_Law_Clinic_1201_Initial_Submission_2014.pdf (petitioning for a repair exemption for agricultural machinery).

5. See Pamela Samuelson, *Right to Tinker*, 17 THEORETICAL INQUIRIES L. 563, 589 (2016) (“Ordinary users rarely have the technical expertise or the inclination to spend time trying to bypass TPMs to tinker with products . . .”).

6. See WHO, CHILDREN AND DIGITAL DUMPSITES 3–4 (June 15, 2021), <https://www.who.int/publications/i/item/9789240023901>.

7. See *infra* notes 71–75 and accompanying text.

8. See Lesley Fair, FTC Business Blog, *FTC Announces Three Right-to-Repair Cases: Do Your Warranties Comply With the Law?* (July 7, 2022), <https://www.ftc.gov/business-guidance/blog/2022/07/ftc-announces-three-right-repair-cases-do-your-warranties-comply-law> [<https://perma.cc/F2YT-M8G2>].

9. European Commission, Commission regulation (EU) 2019/2021. Off. J. Eur. Union 26; Taina Pihlajarinne, *European Steps to the Right to Repair: Towards a Comprehensive Approach to a Sustainable Lifespan of Products and Materials?* (Oct. 9, 2020). University of Oslo Faculty of Law Research Paper No. 2020–32, available at SSRN: <https://ssrn.com/abstract=3708221>. See also Anthony D. Rosborough, *Zen and the Art of Repair Manuals: Enabling a Participatory Right to Repair through an Autonomous Concept of EU Copyright Law* (Apr. 21, 2022), available at SSRN: <https://ssrn.com/abstract=4089949> or <http://dx.doi.org/10.2139/ssrn.4089949> (arguing that the EU 2001 Copyright Directive could be interpreted in a manner that provides a repair exception for nonprofit, community repair).

10. See Australian Government, Productivity Commission, RIGHT TO REPAIR, FINAL REPORT (Dec. 1, 2021), <https://www.pc.gov.au/inquiries/completed/repair#report>.

11. See Timothy B. Lee, *When Tech Companies Won't Provide Service Manuals, This Guy Writes His Own*, WASHINGTON POST (Jan. 13, 2014), <https://www.washingtonpost.com/news/the-switch/wp/2014/01/13/when-tech-companies-wont-provide-service-manuals-this-guy-writes-his-own/> [<https://perma.cc/W677-DJF7>] (recounting Kyle Wiens's experience).

12. See *id.* In 2022, Apple began offering self-repair to its consumers, arguably in reaction to the progress made by repair activists in getting state legislatures to pass repair-related laws. See *infra* note 83.

13. See Kyle Wiens, *The Shady World of Repair Manuals*, WIRED (Nov. 12, 2012, 6:08PM), <https://www.wired.com/2012/11/cease-and-desist-manuals-planned-obsolescence/> (recounting the enforcement efforts of Toshiba).

14. See Kyle Wiens (@kwiens), Twitter (June 11, 2020, 1:39 PM), <https://twitter.com/kwiens/status/1271134890872856577> (posting the cease-and-desist letter that iFixit received from Steris).

15. See Samuelson, *supra* note 5, at 589.

16. 17 U.S.C. §1201 et seq. See Jane C. Ginsburg, *Copyright Legislation for the "Digital Millennium,"* 23 COLUM. J. LAW & ARTS 137, 137–8 (1999) [hereinafter, Ginsburg, *Copyright Legislation*].

17. 17 U.S.C. §1201(a).

18. See FTC, *supra* note 1, at 23.

19. 17 U.S.C. §1204 (“(a) In General.—Any person who violates section 1201 or 1202 willfully and for purposes of commercial advantage or private financial gain—(1) shall be fined not more than \$500,000 or imprisoned for not more than 5 years, or both, for the first offense; and (2) shall be fined not more than \$1,000,000 or imprisoned for not more than 10 years, or both, for any subsequent offense.”).

20. 17 U.S.C. §1201(a)(1)(C).

21. See US Copyright Office, RULEMAKING PROCEEDINGS UNDER SECTION 1201 OF TITLE 17, <https://www.copyright.gov/1201/> (accessed June 24, 2023).

22. See US Copyright Office, SECTION 1201 RULEMAKING: SEVENTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION 222–25 (2018).

23. See *id.*

24. See *id.*

25. See Leah Chan Grinvald & Ofer Tur-Sinai, *Intellectual Property Law and the Right to Repair*, 88 FORD. L. REV. 63, 83–97 (2019) (analyzing various theories of intellectual property law) [hereinafter, Grinvald & Tur-Sinai, *IP and Repair*]. Other theories also support a right to repair, such as antitrust law in the United States or anticompetition law in the EU. See, e.g., Michael A. Carrier, *How the Federal Trade Commission Can Use Section 5 to Strengthen the Right to Repair* 37 BERKELEY TECH. L.J., 1145 (2022), available at SSRN: <https://ssrn.com/abstract=4200736> (US antitrust law could help repair);

Anthony D. Rosborough, *Unscrewing the Future: The Right to Repair and the Circumvention of Software TPMs in the EU*, 11 (2020) JIPITEC (EU anticompetition law could help repair).

26. See Grinvald & Tur-Sinai, *IP and Repair*, *supra* note 26 at 91–93 (describing the theory in the patent context).

27. See Jane C. Ginsburg, *Copyright and Control Over New Technologies of Dissemination*, 101 COLUM. L. REV. 1613, 1618 (2001) (“A goal of the DMCA was to encourage copyright owners to make their works available through digital networks.”) [hereinafter, Ginsburg, *Copyright and Control*].

28. See Dan L. Burk, *Anticircumvention Misuse*, 50 UCLA L. REV. 1095, 1102–3 (2003).

29. See Ginsburg, *Copyright and Control*, *supra* note 28, at 1618.

30. See Ginsburg, *Copyright Legislation*, *supra* note 17, at 140–43 (arguing that the DMCA has created a new “right of access”).

31. See Burk, *supra* note 29, at 1106–7 (“Violation of the technological protections on a copyright work is an infringement entirely separate from unauthorized reproduction, distribution, adaptation, public performance, public display, or digital transmission of the controlled material—the technological infringer need engage in none of these exclusive activities to violate the anticircumvention provision.”).

32. See Amanda Levendowski, *Defragging Feminist Cyberlaw*, 37 BERKELEY TECH. L.J. 1, 7 (forthcoming 2023), available at SSRN: <https://ssrn.com/abstract=4208296> [hereinafter, Levendowski, *Defragging*].

33. See Amanda Levendowski, *Feminist Use*, in FEMINIST CYBERLAW [5] (Meg Leta Jones & Amanda Levendowski, eds., 2024) [hereinafter, Levendowski, *Feminist Use*].

34. See *supra* Grinvald & Tur-Sinai, *IP and Repair*, note 25.

35. See Kostyantyn Pivnenko, UN Environment Programme, *Towards a Circular Economy for the Electronics Sector in Africa: Overview, Actions and Recommendations* 20 (2021), <https://wedocs.unep.org/handle/20.500.11822/40108>; UN Environment Programme, *A NEW CIRCULAR VISION FOR ELECTRONICS: TIME FOR A GLOBAL REBOOT* 14 (2019), <https://wedocs.unep.org/handle/20.500.11822/32762>.

36. UN Environment Programme, *A NEW CIRCULAR VISION FOR ELECTRONICS: TIME FOR A GLOBAL REBOOT* 14 (2019), <https://wedocs.unep.org/handle/20.500.11822/32762>.

37. The cracked smartphone screen is a paradigmatic example of this. See Aaron Perzanowski, *THE RIGHT TO REPAIR* 2 (2022).

38. See Nancy Levit & Robert Verchick, *FEMINIST LEGAL THEORY: A PRIMER*, x–xi (2nd ed., 2016) (“What makes a theory ‘feminist’ is itself a subject of considerable scholarly debate, but a pretty good starting point identifies a focus on women, gender relations, power, and inequality”); Hazel Tionloc Biana, *Extending bell hooks’ Feminist Theory*, 21 J. INT’L WOMEN’S STUD. 13, 13 (2020).

39. bell hooks, *FEMINIST THEORY: FROM MARGIN TO CENTER* (Pluto Press, 2nd ed., 2000) (originally published 1984)

40. See *id.*, at 40 (“Individuals who fight for the eradication of sexism without supporting struggles to end racism or classism undermine their own efforts”). But cf Biana, *supra* note 38, at 24–27 (critiquing hooks’s theory, but offering ways to uplift and extend it).

41. See Levendowski, *Defragging*, *supra* note 32 (quoting Kimberlé Crenshaw).

42. hooks, *supra* note 39, at 5 (“Being oppressed means the *absence of choices*.”) (italics in original).

43. Merriam-Webster Dictionary, <https://www.merriam-webster.com/dictionary/access>.

44. Levendowski, *Feminist Use*, *supra* note 33, at 5.

45. *Id.* (citing Anne Firor Scott, *Women and Libraries*, 21 J. LIBRARY HISTORY (1974–1987) (1986).

46. See Ginsburg, *supra* note 27.

47. See generally Leah Chan Grinvald, *Policing the Cease-and-Desist Letter*, 49 U.S.F. L. REV. 409 (2015) (arguing for greater oversight of cease-and-desist letters, since abusive letters often lead to quick capitulation by the recipient of the sender’s demands).

48. *Kirtsaeng v. John Wiley & Sons, Inc.*, 568 U.S. 519, 527 (2013).

49. 568 U.S. at 527. Unfortunately for the copyright owner, the Supreme Court held that the first sale doctrine extended internationally, such that the graduate student had the right to import textbooks that had been lawfully first sold in a jurisdiction outside of the United States. *Id.*, at 554.

50. See *supra* notes 2 and 19.

51. Letter from Electronic Frontier Foundation, to Steris, on behalf of iFixit (May 26, 2020), <https://www.eff.org/document/letter-eff-steris-behalf-ifixit-5-26-2020>.

52. MERRIAM-WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/classism> [<https://perma.cc/6G4F-NZB8>].

53. See Paul Taylor, ART + Marketing, MEDIUM (June 12, 2016), <https://perma.cc/KH28-FB9W>.

54. See Ryan O'Hare, *How Long Would YOU Wait to Upgrade? Apple Customers Tend to Keep iPhones for Three Years on Average Before Trading In*, DAILY MAIL (Apr. 15, 2016), <https://www.dailymail.co.uk/sciencetech/article-3541795/Time-running-iPhone-Macbook-Apple-officially-reveals-products-three-years.html> [<https://perma.cc/9F7P-A48K>].

55. Kaveh Waddell, *People Want to Get Phones and Appliances Fixed—But Often, They Can't*, CONSUMER REPORTS (Feb. 28, 2022), <https://www.consumerreports.org/consumer-rights/people-want-to-get-phones-appliances-fixed-but-often-cant-a1117945195/> (citing the cost to repair a broken screen at the Apple store at \$279, and at an independent repairer at around \$200 [<https://perma.cc/ZLJ2-WZ7A>]).

56. See FTC, *supra* note 19, at 38 (citing testimony from Aaron Lowe of the Auto Care Association). See also Waddell, *supra* note 55.

57. See FTC, *supra* note 1, at 24.

58. FTC, *supra* note 1, at 39.

59. *Id.*

60. See UN ENVIRONMENT PROGRAMME, *supra* note 36, at 10 (estimating that from 2021 to 2050, the amount of e-waste is set to rise from 52 million tons to 120 million tons). The average yearly estimate was calculated on dividing the difference in the e-waste generation (68 million tons) by the number of years from 2021 to 2050 (29), which is approximately 2.3 million tons.

61. See *id.*, at 14.

62. MERRIAM-WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/imperialism> [<https://perma.cc/6TZC-97NV>].

63. See UN ENVIRONMENT PROGRAMME, *supra* note 36, at 12.

64. *Id.* at 13.

65. *Id.*

66. *Id.*

67. See Kristen Grant, et al., *Health Consequence of Exposure to E-Waste: A Systematic Review*, LANCET (Dec. 2013), at 353.

68. *Id.*, at 350.

69. The authors are not arguing that a global right to repair would end all poverty, but it could be one indirect way of ending these forms of oppression. However, there is some research that suggests it is not a linear line of causation. See generally Chen Jin, Luyi Yang & Cungen Zhu, *Right to Repair: Pricing, Welfare, and Environmental Implications*, 29 MANAGEMENT SCI. 1017 (2023) (arguing that their analytical model shows if repair laws are adopted, there would not necessarily be a reduction in e-waste).

70. See Leah Chan Grinvald and Ofer Tur-Sinai, *The Right to Repair: Perspectives from the United States*, 21 AIPJ 98, 102 (2020) (providing overview of state-based legislation).

71. See Press Release, Governor Hochul Signs the Digital Fair Repair Act Into Law (Dec. 29, 2022), <https://www.governor.ny.gov/news/governor-hochul-signs-digital-fair-repair-act-law#:~:text=Governor%20Kathy%20Hochul%20signed%20the,anticompetitive%20efforts%20to%20limit%20repair> [<https://perma.cc/SH2H-RHM9>].

72. See NYS The Digital Fair Repair Act (S4104-A/A7006-B), Sec. 3(C) <https://www.nysenate.gov/legislation/bills/2021/S4104> (3. Limitations. (C) Nothing in this Section shall be construed to require

an original equipment manufacturer or an authorized repair provider to provide to an owner or independent repair provider access to information other than documentation, that is provided by the original equipment manufacturer to an authorized provider pursuant to the terms of an arrangement described in paragraph (A) of subdivision one of this Section”).

73. See CO HB22–1031 (2022 Regular Session), <https://leg.colorado.gov/bills/hb22-1031>; Elaine S. Povich, *Colorado Enacts First ‘Right to Repair’ Law, But Only for Wheelchairs*, PEW (June 3, 2022), <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2022/06/03/colorado-enacts-first-right-to-repair-law-but-only-for-wheelchairs>.

74. See Cameron Faulkner, *New York Breaks the Right to Repair Bill as It’s Signed into Law*, THE VERGE (Dec. 29, 2022, 8:11AM), <https://www.theverge.com/2022/12/29/23530733/right-to-repair-law-new-york-tech-hochul-oems-parts> (quoting Nathan Proctor, who is the senior right to repair campaign director at the US Public Interest Research Group as saying, “while it’s [the NY law] not everything we wanted, it’s the first of its kind in the nation, and just the start”).

75. See REPAIR.ORG, GET INVOLVED, <https://www.repair.org/stand-up> (providing an interactive map of where bills have been introduced, passed, or where no right to repair bill has been introduced into the state legislature). By February 2023, there were twenty states that had active right to repair bills pending in their state legislature. In Massachusetts, an updated automobile repair law was passed by voters in 2020, but has been under litigation challenges since then. The law would update the 2012 law to include telematics. See Maddie Stone, *A Massachusetts Law Protects the Right to Repair Your Own Car. Automakers are Suing.*, GRIST (Jan. 11, 2023), <https://grist.org/transportation/a-massachusetts-law-protects-the-right-to-repair-your-own-car-automakers-are-suing/>. See also Leah Chan Grinvald & Ofer Tur-Sinai, *Smart Cars, Telematics and Repair*, 54 U. MICH. J. L. REF. 283 (2021), 295–98 (detailing the need to update the law to include telematics).

76. S. 3830 and HR 4006, Sec. 2 (117th Congress); H.R. 6566 (117th Congress), Freedom to Repair Act of 2022, <https://www.congress.gov/bill/117th-congress/house-bill/6566/text>.

77. See H.R. 4006, Committees, <https://www.congress.gov/bill/117th-congress/house-bill/4006/committees>; S. 3930, Committees, <https://www.congress.gov/bill/117th-congress/senate-bill/3830/committees>; H.R. 6566, Committees, <https://www.congress.gov/bill/117th-congress/house-bill/6566/committees>; *It’s Time for Congress to Hold a Right to Repair Hearing*, Repair.org (Mar. 17, 2022), <https://www.repair.org/blog/2022/3/17/its-time-for-congress-to-hold-a-right-to-repair-hearing>.

78. H.R. 6566 (117th Congress), Freedom to Repair Act of 2022, <https://www.congress.gov/bill/117th-congress/house-bill/6566/text>.

79. H.R. 6566, Committees, <https://www.congress.gov/bill/117th-congress/house-bill/6566/committees> (referred to the House Judiciary Committee on Feb. 2, 2022); see *supra* note 77, Repair.org.

80. H.R. 906, To ensure consumers have access to data relating to their motor vehicles, critical repair information, and tools, and to provide them choices for the maintenance, service, and repair of their motor vehicles, and for other purposes (118th Congress), <https://www.congress.gov/bill/118th-congress/house-bill/906/text?s=3&r=1&q=%7B%22search%22%3A%5B%22repair%22%5D%7D> (accessed June 24, 2023).

81. For example, the automobile industry was successful in 2014 in coming together to agree on a Memorandum of Understanding that provided information and repair parts to independent service providers. Memorandum of Understanding Among Automotive Aftermarket Industry Association, Coalition for Auto Repair Equality, Alliance of Automobile Manufacturers and Association of Global Automakers (Jan. 15, 2014), <http://www.njgca.org/wp-content/uploads/Right-to-Repair-national-MOU-01-23-14.pdf> [<https://perma.cc/5L2F-DF5C>]. In addition, there is a separate MOU for commercial vehicles. See Memorandum of Understanding: National Commercial Vehicle Service Information (Aug. 12, 2015), <https://perma.cc/T8YL-FXNM>. Unfortunately, the legislation that would update this law to include telematics has been stalled through a lawsuit that has been pending since 2020. See *supra* note 76.

82. See Sean Hollister, *The Era of Fixing Your Own Phone Has Nearly Arrived*, VERGE.COM (Apr. 9, 2022, 9:00AM), <https://www.theverge.com/23017361/ifixit-right-to-repair-parts-google-samsung-valve-microsoft>.

83. See Press Release, Apple, *Apple's Self Service Repair Now Available* (Apr. 27, 2022), <https://www.apple.com/newsroom/2022/04/apples-self-service-repair-now-available/> [https://perma.cc/BG3S-BYEF].

84. See Brian Chen, *I Tried Apple's Self-Repair Program with My iPhone. Disaster Ensued*, NEW YORK TIMES, Personal Tech. (May 25, 2022), <https://www.nytimes.com/2022/05/25/technology/personaltech/apple-repair-program-iphone.html>; Paul Roberts, *How Apple's Self-Repair Program Is Engineered to Fail: Repair Roundup*, WEEK OF MAY 23, IFIXIT NEWS (May 28, 2022), <https://www.ifixit.com/News/60589/how-apples-self-repair-program-is-engineered-to-fail-repair-roundup-week-of-may-23>.

85. Sean Hollister, *Apple Shipped Me a 79-Pound iPhone Repair Kit to Fix a 1.1 Ounce Battery*, VERGE.COM (May 21, 2022, 3:00AM), https://www.theverge.com/2022/5/21/23079058/apple-self-service-iphone-repair-kit-hands-on?mc_cid=b9cdab4428&mc_eid=3566377881.

86. *Id.*

87. See Press Release, *Microsoft Agrees to Expand Consumers' Repair Options, As You Sow* (Oct. 7, 2021), <https://www.asyousow.org/press-releases/2021/10/7/microsoft-agrees-expand-consumers-repair-options>.

88. Oakdene Hollins, *Executive Summary: An Assessment of the Greenhouse Gas Emissions and Waste Impacts From Improving the Repairability of Microsoft Devices*, at 1 (Apr. 22, 2022), <https://www.microsoft.com/en-us/corporate-responsibility/reports-hub#coreui-feature-6w178t7> (link to the report is found under Sustainability Reports, titled "Summary of Sustainability Benefits of Microsoft Device Repair").

89. See Press Release, *Microsoft Delivers on Promise to Investors, Releases Study Showing Device Repair Reduces Waste, Climate Emissions, As You Sow* (Apr. 29, 2022), <https://www.asyousow.org/press-releases/2022/4/29/microsoft-study-device-repair-reduces-waste-climate-emissions>.

90. See iFixit.com, *Microsoft Surface Service Tools*, <https://www.ifixit.com/Microsoft-Surface-Tools/Microsoft-Surface-Tools> (accessed June 24, 2023).

91. See Perzanowski, *supra* note 37, at 201 (showing the degree of consumer agreement with right to repair).

92. *Id.*, at 99.