

WASTE, PROPERTY, AND THE DEMOCRATIC PROCESS

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INTRODUCTION

In *Waste, Property, and Useless Things*, Professor Meredith Render takes aim at an important social problem — the voluminous (and often hazardous) waste produced by our seemingly insatiable consumption of the latest electronic gadgets.¹ This phenomenon is part of a much larger solid-waste problem that human beings need to address if we are to achieve a more sustainable future for our species and our planet.² The vast amount of waste material generated by our contemporary consumer lifestyle is so deeply connected to our day-to-day activities that we barely notice it.³ And yet, for all its pervasiveness, it is a relatively recent development in human history. As historian Susan Strasser reminds us:

Most Americans produced little trash before the twentieth century. Packaged goods were becoming popular as the century began, but merchants continued to sell most food, hardware, and cleaning products in bulk. Their customers practiced habits of reuse that had prevailed in agricultural communities here and abroad. . . .

. . . [But, today,] Americans know only a well-developed consumer culture, based on a continual influx of new products. Many of these are designed to be used briefly and then discarded; many are made of plastics and other materials not easily reused, repaired, or returned to nature. Discarding things is taken to be a kind of freedom⁴

Considered within this historical context, the specific issue on which Render focuses — the planned obsolescence of electronic devices⁵ — represents an important cycle within the powerful economic engine of resource extraction, industrial production, consumption, and waste disposal that drives the modern system of global consumer capitalism. But planned obsolescence of consumer electronics is just one facet of a

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¹ Meredith M. Render, *Waste, Property, and Useless Things*, 138 HARV. L. REV. 1260, 1261 (2025).

² Nuru Lama, *The World Has a Waste Problem. Here's How to Fix It*, INT'L FIN. CORP. (Apr. 26, 2024), <https://www.ifc.org/en/blogs/2024/the-world-has-a-waste-problem> [<https://perma.cc/WV4U-BV7L>].

³ Ocean garbage patches — vast accumulations of plastic and other solid wastes — are just one dramatic manifestation of this global problem. See Frankie Adkins, *Visualising the Great Pacific Garbage Patch*, BBC (Jan. 16, 2024), <https://www.bbc.com/future/article/20240115-visualising-the-great-pacific-garbage-patch> [<https://perma.cc/G63C-M9B7>].

⁴ SUSAN STRASSER, *WASTE AND WANT: A SOCIAL HISTORY OF TRASH* 12–16 (1999).

⁵ See Render, *supra* note 1, at 1261.

pervasive consumer culture of convenience and disposability, which some have dubbed “the throwaway culture.”⁶

As Render notes, even though the electronics industry accounts for only two to five percent of solid waste by volume, the waste it generates is uniquely toxic, composed as it is of various rare metals and exotic chemical compounds.⁷ Employing a broadly Lockean framework, she argues that electronics manufacturers’ reliance on a strategy of planned obsolescence to drive (and accelerate) the consumption of their goods violates a broad “antiwaste” principle rooted in Lockean property theory and deeply embedded within the common law.⁸ Most provocatively, she argues that *existing* doctrinal tools within that common law framework provide an effective means for combatting the practice.⁹ Render’s discussion raises several important questions: (1) Can the category of “planned obsolescence” (and therefore “waste,” as she uses the term¹⁰) be defined with sufficient precision? (2) How would Locke assess the problem she describes and the remedies she endorses? And, finally, (3) is the common law of property — administered through judges — the best way to respond?

These questions are not meant to undermine the importance of the issue Render addresses, but I believe they point toward more technically sophisticated and adaptive solutions than the judicial process is likely to be able to generate. Although I agree (with certain qualifications discussed below) with aspects of her claim that there is an antiwaste principle at work within Locke’s property thought, I am less persuaded by her account of what would count as “waste” for Locke or by the legal consequences she thinks flow from that principle under established property law doctrines. In short, I do not see easy or desirable ways to sidestep the need for sustained democratic, political, and (ultimately) cultural engagement on this topic as we search for effective and enduring solutions to the problem of waste.

I. THE CHALLENGE OF DEFINING PLANNED OBSOLESCENCE

Render understands planned obsolescence as the “intentional[.]”¹¹ or “deliberate[.]”¹² production of consumer (electronic) goods that have a

⁶ Pope Francis, ENCYCLICAL LETTER LAUDATO SI’ OF THE HOLY FATHER FRANCIS ON CARE FOR OUR COMMON HOME 14 (2015), https://www.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si_en.pdf [<https://perma.cc/PQF8-G6DC>].

⁷ Render, *supra* note 1, at 1263 n.13 (quoting Ankit et al., *Electronic Waste and Their Leachates Impact on Human Health and Environment: Global Ecological Threat and Management*, ENV’T TECH. & INNOVATION, Nov. 2021, at 1, 2).

⁸ *Id.* at 1267.

⁹ *Id.* at 1268.

¹⁰ *See, e.g., id.* at 1262, 1268.

¹¹ *Id.* at 1262.

¹² *Id.* at 1270.

limited lifespan by designing them (a) to stop working prematurely, (b) to be difficult to repair, and (c), because of the combination of the two features, to encourage (or in some cases require) consumers to purchase a new item sooner than they might otherwise have done.¹³ Each of these elements — premature failure, difficulty of repair, and the resulting consumer behavior — presents significant challenges for defining the legal boundaries of the category.

Identifying situations in which a product has been designed to stop working sooner than it “ought to” requires some account of a product’s optimal lifespan. But this seems extremely difficult to accomplish in practice. All products must fail at some point, as Render notes.¹⁴ How are we to distinguish, then, between an object that is designed to fail too soon and one that merely fails in the normal course? The examples discussed by Render are too straightforward to be instructive. The Phoebus Cartel’s explicit intent — through their anticompetitive agreement — to design lightbulbs with a shorter lifespan than the 2,500-hour standard that prevailed at the time was clearly anticompetitive and harmful.¹⁵ The same is true of the Apple case Render discusses at the start of her article — in which Apple was accused of installing a software patch whose sole purpose was allegedly to impair the performance of older model iPhones.¹⁶ Yet these kinds of conspiracies are not an essential feature of planned obsolescence as Render understands it.¹⁷ If they were, the issue would be readily addressed by existing antitrust and consumer protection laws.

Without anticompetitive or deceptive practices, defining planned obsolescence becomes less straightforward. For example, an interesting question is whether the 2,500-hour standard for lightbulbs that preceded the Phoebus Cartel’s conspiracy was itself satisfactory. What if it were possible — even at that time — to manufacture a 5,000-hour bulb but only at a substantially higher price?¹⁸ This hypothetical possibility highlights an important potential tradeoff between durability and affordability. In 1924, if a manufacturer could have made a longer-lasting lightbulb but at a far higher price, would its failure to do so have constituted planned obsolescence?

In addition to the tradeoff between durability and affordability at any given moment, technological progress adds a dynamic dimension to

¹³ See *id.* at 1262 & n.4, 1270.

¹⁴ *Id.* at 1315.

¹⁵ *Id.* at 1271–72.

¹⁶ *Id.* at 1261–62.

¹⁷ See *id.*

¹⁸ Today’s LED lightbulbs can last anywhere between 10,000 and 100,000 hours, with the lower estimate largely resulting from faults in the electrical system and not the bulbs themselves. See Erin Law, *LED Bulbs Don’t Last as Long as Advertised, Here’s Why*, CENCE POWER: THE CENCE BLOG (Feb. 15, 2022), <https://www.cencepower.com/blog-posts/led-bulbs-dont-last-as-long-as-advertised> [https://perma.cc/57U8-L255]. But they are more expensive than incandescent bulbs. *Id.*

the inquiry. Even if it were appropriate to treat the current state-of-the-art technology (for example, the 2,500-hour bulb in 1924) as a kind of conceptual safe harbor, that safe harbor would need to shift over time as the state of the art advanced. The possibility of progress introduces new tradeoffs.

In deploying scarce research dollars, manufacturers need to choose whether to focus on improving affordability or durability or some other aspect of performance, such as energy efficiency. How should we understand the choice between progress on these fronts? A legal rule against planned obsolescence as Render understands it would seem to impose a duty on manufacturers to concentrate their research and development on increased durability alone. A manufacturer would be penalized for choosing to focus its research on improving affordability or efficiency if that focus came at the cost of a slower rate of improvement in durability.

Render notes that the lifespan of major appliances has declined in recent years due to design decisions made by manufacturers.¹⁹ Critics of the design decisions leading to reduced lifespans — which often result from the incorporation of electronic sensors and controls into existing technology — characterize them as obviously wasteful.²⁰ But these critics tend to focus narrowly on declining durability without evaluating possible gains in other areas, such as affordability or efficiency.²¹ Defenders of modern appliances observe that washing machines and dishwashers today consume vastly less electricity and water than their midcentury predecessors and cost significantly less when adjusted for inflation.²² My purpose is not to adjudicate this complex debate, which turns on technical questions I have no expertise to evaluate. My point is simply that focusing narrowly on durability omits important factors from the cost-benefit equation.

Similar questions arise around the right to repair. What is the proper baseline for assessing whether a manufacturer is making it too difficult

¹⁹ See Render, *supra* note 1, at 1270–71.

²⁰ See, e.g., Anne Marie Green, *You're Not Crazy: Your Appliances Were Built to Fail You*, PIRG (May 13, 2021), <https://pirg.org/articles/youre-not-crazy-your-appliances-were-built-to-fail-you> [<https://perma.cc/WWY6-URQL>].

²¹ See, e.g., *id.*; *The Decline of Durability: Why Modern Appliances Don't Last*, MMINIMAL: BLOG, <https://mmminimal.com/the-decline-of-durability-why-modern-appliances-dont-last> [<https://perma.cc/C5VK-MY2C>].

²² See Mark J. Perry, *The "Good Old Days" Are Now: Today's Home Appliances Are Cheaper, Better, and More Energy Efficient Than Ever Before*, AM. ENTER. INST. (Dec. 1, 2012), <https://www.aei.org/carpe-diem/the-good-old-days-are-now-todays-home-appliances-are-cheaper-better-and-more-energy-efficient-than-ever-before-2> [<https://perma.cc/VK3S-G4DJ>]; John Waggoner, *50 Years of Inflation: What Things Cost in 1972*, AARP (July 7, 2022), <https://www.aarp.org/money/budgeting-saving/info-2022/prices-compared-to-50-years-ago> [<https://perma.cc/VK36-XK5K>] (observing that a Sears washer and dryer in 1972 cost twice as much as the cheapest Sears models in 2022). There is a veritable cottage industry of internet analysis of changing appliance prices over time, though virtually all of them show declining prices in real terms over the past fifty to one hundred years. See, e.g., Perry, *supra*; Waggoner, *supra*.

to repair a device? The lightbulb example is again instructive. It might be possible to manufacture a bulb in which filaments could be replaced after they burn out, but there are reasons of performance and durability in favor of designs in which the bulb is permanently sealed shut. Incandescent bulbs are vacuum sealed with an inert gas inside to prevent the oxidation of the delicate filament.²³ This inhibits their repairability but increases their longevity and allows for the use of less bulky (and therefore more resource- and energy-efficient) filaments.²⁴ If a more repairable lightbulb design would cost, say, twice as much as the existing technology, would the failure to adopt it constitute planned obsolescence? What if the more repairable bulb were less durable or consumed twice as much electricity? Tech observers note that Apple likely makes its iPhones less easily repairable in order to make them more durable.²⁵ Any legal definition of planned obsolescence needs to be able to assess the complex tradeoffs between affordability, repairability, durability, and efficiency.

Finally, we need to understand the consumer's role in this system. Sticking with the lightbulb example, the rise of electric lighting involved a series of tradeoffs between consumer preferences, convenience, and waste. The oil lamp was a highly durable, easily repairable technology that produced very little solid waste.²⁶ But it was less useful than electric lighting in several respects. A typical kerosene lantern might generate 10–100 lumens of light,²⁷ far less than an incandescent bulb.²⁸ They were also prone to starting fires.²⁹ Consumers understandably embraced the new technology of electric lighting, notwithstanding the treadmill of consumption and waste disposal on which it placed them — the need to purchase an endless supply of disposable lightbulbs that

²³ See Dipti Chitnis et al., *Escalating Opportunities in the Field of Lighting*, 64 RENEWABLE & SUSTAINABLE ENERGY REVS. 727, 730 (2016).

²⁴ See *id.* But why should we compare the repairability of lightbulbs against only other lightbulbs? Why not include in the comparison competing lighting technologies? Oil lamps, for example, were easily repaired. Is the introduction of a less repairable (but otherwise superior) technology (such as the electric lightbulb) a kind of planned obsolescence?

²⁵ See *The Eternal Dilemma: Balancing iPhone's Durability with Repairability*, GIZMOGO (June 2, 2024), <https://www.gizmodo.com/shortnews/balancing-iphone-durability-repairability-dilemma> [<https://perma.cc/B43D-9V92>].

²⁶ Cf. STRASSER, *supra* note 4, at 12 (noting that most Americans produced little solid waste before the turn of the twentieth century).

²⁷ See *Lighting Technologies*, ENERGYPEDIA (Sept. 8, 2015, 2:51 PM), https://energypedia.info/wiki/Lighting_Technologies [<https://perma.cc/KG7M-D6DD>].

²⁸ See *id.* (indicating that incandescent lamps generate approximately 1,200 lumens of light).

²⁹ See WORLD HEALTH ORG., WHO INDOOR AIR QUALITY GUIDELINES: HOUSEHOLD FUEL COMBUSTION 1, 15 (2014), https://iris.who.int/bitstream/handle/10665/144309/WHO_FWC_IHE_14.01_eng.pdf [<https://perma.cc/DY3H-XMV3>]; see also *We Play Along, Sing Mrs O'leary's Cow — Playful Children's Camp Song*, YOUTUBE (Oct. 13, 2020), <https://www.youtube.com/watch?v=EJDFonygEtI> [<https://perma.cc/M48M-HDHE>] (singing about Mrs. O'Leary's infamous cow).

could not be repaired. Does the fault for that shift in consumer behavior lie with the lightbulb manufacturers or with consumers or with both?

In the context of consumer electronics, drawing the line between manufacturer and consumer responsibility becomes even more complex. People upgrade their iPhones every two to three years,³⁰ not just because of Apple's failure to build more robust phones but also because newer models include features — better information security, better cameras, more memory, faster processors, not to mention new styling — that consumers seem to want.³¹ Styling is particularly significant. According to the European Commission's Joint Research Centre, the most common reason consumers report for upgrading their phone is aesthetic (not technological or functional) obsolescence.³² How can we tell the difference between the kind of planned obsolescence on which Render focuses — replacement based on suboptimal durability³³ — and run-of-the-mill background cycles of consumption and disposal that are rooted in steady product improvement and shifting consumer tastes? Like fashion designers, consumer-electronics manufacturers invest a great deal of time, effort, and resources into encouraging consumer demand for the newest gadgets.³⁴ Even with a product that is designed for maximal durability, manufacturer marketing and aesthetic design efforts can cause consumer taste to shift more rapidly than the product's functional lifespan. But consumers themselves are essential collaborators in that process, not hapless victims.

My purpose is not to deny the significance of planned obsolescence or its wastefulness. I largely share Render's negative evaluation of the practice and the harms that it generates.³⁵ But these questions of definition and responsibility reveal the fuzziness of the category and the

³⁰ See Devesh Beri, *Fewer Than 1 out of 10 People Are Upgrading Their iPhone Every Year*, MAC OBSERVER (Sept. 15, 2024, 11:18 AM), <https://www.macobserver.com/iphone/less-than-1-out-of-10-people-are-updating-their-iphone-every-year/> [<https://perma.cc/3WV8-JFS9>].

³¹ See Jerri Ledford, *Research Finds Only 18% of People Upgrade Their iPhones for New Features*, LIFEWIRE (Sept. 4, 2024, 2:01 PM), <https://www.lifewire.com/why-people-upgrade-their-iphone-8706384> [<https://perma.cc/DS4V-FDQN>].

³² See NSYS Group Team, *Average Device Lifespan: How Long Does a Cell Phone Last*, NSYS GROUP: BLOG (Oct. 16, 2024), <https://nsysgroup.com/blog/average-device-lifespan-how-long-does-a-cell-phone-last> [<https://perma.cc/2ZM8-K8XX>]. But see Ledford, *supra* note 31 (reporting that a survey by Consumer Intelligence Research Partners found that 73% of surveyed consumers upgrade due to technical obsolescence or breaking or losing their phone). According to another study, “[p]sychological drivers” of premature cellphone obsolescence were “equally important” with technical ones. Atrina Oraee et al., *Overcoming Premature Smartphone Obsolescence Amongst Young Adults*, CLEANER AND RESPONSIBLE CONSUMPTION, March 2024, at 1, 1.

³³ See Render, *supra* note 1, at 1272.

³⁴ See Brian X. Chen, *Choosing to Skip the Upgrade and Care for the Gadget You've Got*, N.Y. TIMES: TECH FIX (Apr. 20, 2016), <https://www.nytimes.com/2016/04/21/technology/personaltech/choosing-to-skipthe-upgrade-and-care-for-the-gadget-youve-got.html> [<https://perma.cc/FX65-7WBS>] (“Many tech companies are trying to train people to constantly upgrade their gadgets — part ways with a device, the argument goes, as soon as something newer and faster comes along.”).

³⁵ See, e.g., Render, *supra* note 1, at 1262 (“Unsurprisingly, planned obsolescence strategies also generate enormous amounts of physical waste in the form of discarded objects.”).

challenges of translating that negative evaluation into legal doctrine. Looking back over a span of fifty years, it is deceptively easy to conclude that manufacturers have led us down a false path of declining durability. But each individual decision during that period, introduced over the span of dozens of design generations, presents a far more subtle question of tradeoffs between values like affordability, durability, efficiency, repairability, and the satisfaction of consumer preferences.

Definitional problems are not unusual in the common law of property, as Render notes.³⁶ And scholars have written extensively about the tradeoffs of clear rules versus more flexible (and fuzzy) standards within property law.³⁷ The fuzziness of planned obsolescence would be less troubling if Render were advocating a more flexible remedy or even a broadly forward-looking policy framework. For the antiwaste policy-maker or regulator, the challenge would not be to define planned obsolescence with great precision or to assign moral responsibility. The focus instead would be on defining a set of end-state goals for consumer electronics — whether it be less overall material waste, greater consumer satisfaction, or some combination of desired goals — and then evaluating and testing different strategies for encouraging (or discouraging) behaviors that might incrementally promote (or undermine) them. The proposals generated within such a framework would almost certainly take the form of practices conducive to incremental progress toward “more” or “less” waste, “more” or “less” consumption, “more” or “less” repairability, and the like. The process would be self-consciously experimental and iterative.

But Render’s analysis is self-consciously moral, deontological, and backward looking. It is therefore more binary in its logic and in its proposed remedies, which creates greater pressure for definitional clarity. As she puts it, “the Lockean imperative against waste is a deontological proposition Insofar as we intentionally destroy an object, we lose the right to own it — and thereby the power to convey it.”³⁸ If these are the all-or-nothing stakes, then the need (or at least the hope) to develop a clearer understanding of what constitutes the “intentional[]”³⁹ destruction of an object becomes more important.

The technical complexity of the questions around planned obsolescence seems virtually to guarantee that litigating them in a common law court in which judges lack any special technical expertise would devolve into “battle[s] of the experts.”⁴⁰ The fuzziness of the category of planned obsolescence is therefore a significant challenge that Render needs to

³⁶ See, e.g., *id.* at 1300–01 (explaining the common law’s difficulty defining abandonment).

³⁷ See, e.g., Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 580 (1988).

³⁸ Render, *supra* note 1, at 1267–68.

³⁹ *Id.* at 1262.

⁴⁰ Christopher Tarver Robertson, *Blind Expertise*, 85 N.Y.U. L. REV. 174, 177 (2010). See generally *id.* (explaining this concept broadly in civil litigation).

overcome to make her prescriptions more persuasive. Given the novelty of the doctrinal solution she is proposing, she has a relatively free hand to recommend different institutional responses to the problem of planned obsolescence. Her principal reason for favoring common law adjudication seems to be her despair that other kinds of solutions would be forthcoming through the political process.⁴¹ In retreating to second- and third-best solutions, however, it is important to acknowledge the costs of doing so. The difficulty of line-drawing is chief among them.

II. PLANNED OBSOLESCENCE AND WASTE THROUGH A LOCKEAN LENS

In light of Render's decision to frame her project in self-consciously Lockean terms,⁴² it is worth spending some time to evaluate the problem of planned obsolescence in consumer goods through the lens of Locke's theory of property as set forth in chapter five of the *Second Treatise of Government*.⁴³ As a matter of textual interpretation, this is a challenging undertaking because Locke took as his subject the "natural" emergence of property rights from reasoning about the state of nature, rather than the later-lived realities of industrial production and consumer culture.⁴⁴ In Locke's discussion of property, virtually all his examples — whether of appropriations out of the commons or of mature private ownership⁴⁵ — derive from agrarian (or even pre-agrarian) contexts. Thus, when he writes of appropriation and use, his examples are of fish and ambergris, apples and acorns.⁴⁶ When he discusses private ownership, he focuses on farming and land or trade in agricultural goods.⁴⁷ When he says "property," land is the principal thing he has in mind. "[T]he chief matter of property," Locke says, is "now not the fruits of the earth, and the beasts that subsist on it, but *the earth itself* . . ."⁴⁸

Render is correct that Locke's theory limits what can be appropriated in the state of nature to "[a]s much as any one can make use of to any advantage of life before it spoils."⁴⁹ But Locke's concept of spoilage is very literal: apples rotting in the barrel, things becoming utterly useless to everyone.⁵⁰ Consumption is similarly literal — eating an apple

⁴¹ See Render, *supra* note 1, at 1265 ("[A] successful legislative response to planned obsolescence has not been forthcoming in the United States.")

⁴² See *id.* at 1267 ("[M]any of the rules of property are rendered more coherent when we understand them as a series of instantiations of the Lockean imperative against waste.")

⁴³ See JOHN LOCKE, *SECOND TREATISE OF GOVERNMENT* 18–30 (C. B. Macpherson ed., Hackett Publ'g Co. 1980) (1690).

⁴⁴ See *id.* at 18.

⁴⁵ See *id.* at 19, 29–30.

⁴⁶ *Id.* at 19–20.

⁴⁷ See *id.* at 21, 28.

⁴⁸ *Id.* at 21 (first emphasis omitted).

⁴⁹ Render, *supra* note 1, at 1276 n.36 (quoting JOHN LOCKE, *TWO TREATISES OF GOVERNMENT* 249 (London, Awnsham Churchill 1690)).

⁵⁰ See LOCKE, *supra* note 43, at 24.

or enjoying a loaf of bread.⁵¹ For Locke, the harm of spoilage is the way it interferes with the opportunity for others to consume a useful physical thing before it goes bad.⁵² Locke allows that people can accumulate more than they can personally consume but only as long as they part with perishable resources — through trade or gift — before they go bad and are of no use to anyone else.⁵³ For Locke, perishable goods are like hot potatoes that must either be consumed or conveyed (for someone else to consume) before they spoil.⁵⁴

Is “planned obsolescence”⁵⁵ a violation of Locke’s prohibition on the waste of perishable natural resources taken from the commons? As a matter of Lockean exegesis, this is a difficult interpretation to sustain for two reasons. First, the moment of spoilage is the moment the material thing ceases to be useful. The person who allows the thing to spoil in their possession is the one who has violated Locke’s prohibition on waste.⁵⁶ In the case of an apple, the person who commits waste is the person who fails either to eat the apple or to pass (or sell) it to someone else before it rots.⁵⁷ In the case of the iPhone, the analogous person would presumably be the one who possesses the phone at the moment it becomes a useless physical object. In most cases, this would be the consumer, not the manufacturer.

Second, Locke exhibits few concerns about the finite nature of the earth’s resources.⁵⁸ This outlook is reinforced by his generally favorable attitude toward human labor, which he sees as the source of virtually all the utility we derive from things.⁵⁹ In Locke’s view, 90% (or 99% or even ultimately 99.9%) of the value of useful things comes from human labor. Interestingly, the word “waste” appears eight times in the Second Treatise’s chapter on property, and in six of those cases, Locke uses the word to refer to uncultivated or unimproved land.⁶⁰ For Locke, “it is labour indeed that puts the difference of value on every thing.”⁶¹

In light of the value Locke attaches to human labor over natural resources, he likely would have viewed a complex manufactured device such as the iPhone as a successful story of the appropriation and consumption of natural resources. According to one analysis, the raw materials that make up an iPhone have been estimated to cost just over

⁵¹ See, e.g., *id.* at 28 (suggesting that the most useful things are perishable, consumable goods).

⁵² See *id.* at 24 (“[I]f they perished, in his possession . . . he invaded his neighbour’s share . . .”).

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Render, *supra* note 1, at 1268.

⁵⁶ See LOCKE, *supra* note 43, at 24.

⁵⁷ See *id.* at 28.

⁵⁸ See *id.* at 21, 23 (noting how the natural resources in the world are sufficient to provide for a much larger population).

⁵⁹ See *id.* at 27 (considering all the factors that contribute to “the bread we eat,” Locke concludes that “the earth furnished only the almost worthless materials” (emphasis omitted)).

⁶⁰ See *id.* at 23–24, 26–28.

⁶¹ *Id.* at 25 (emphasis omitted).

\$1,⁶² or roughly 0.2% of “[t]he cost of making an iPhone 15 Pro.”⁶³ The rest of its production cost is attributable to energy consumption, human labor, and intellectual property.⁶⁴ (Coincidentally, this 0.2% estimate for the raw material cost is a fairly close approximation of Locke’s most aggressive estimate of the value of human labor and ingenuity within finished products.⁶⁵) Rather than viewing the natural resources that go into an iPhone as being wasted, Locke might conclude that those natural resources had been ingeniously and productively reconfigured into an incredibly useful device that millions of people are willing to purchase for \$1,000.⁶⁶ After the buyer has consumed the product for two to three years, the device becomes either nonfunctional or, more likely, outmoded. Rather than condemning this cycle as waste, however, the Lockean defender of Apple might argue that the conversion of a dollar of raw materials into two years of iPhone use is at least equivalent to a farmer growing an apple that a consumer then eats. The iPhone and the raw materials within it have not been wasted but successfully consumed.

One obvious difference between an iPhone and an apple is that we can compost the apple core, returning it to the soil to grow more apples. But the raw materials in the iPhone are lost to future potential users, unless the phone can be recycled after its useful life is over. Render might therefore respond to my hypothetical pro-iPhone Lockean argument by pushing Locke’s theory to take more seriously the finite nature of the earth’s resources.⁶⁷ On this view, anything but a sustainable closed loop of production, consumption, and recycling or reuse (or composting) will slowly drain the earth of resources, depriving future generations of their own opportunity to enjoy the common resources of the planet. This ecological reading of Locke is an attractive one. But it is significantly more far-reaching and demanding than Render’s proposal. It would not concern itself narrowly with planned obsolescence but with the resource depletion inherent in our modern consumer lifestyle, no

⁶² See *Recipe for an iPhone*, THE CURIOUS ECONOMIST (Jan. 1, 2020), <https://thecurieuseconomist.com/a-recipe-for-iphone> [<https://perma.cc/XA2X-XJDC>]. Even if we discounted this analysis as implausible and assumed the raw materials were valued at \$10 (or even \$100) per iPhone, it would not change much in the analysis from the standpoint of Locke’s evaluation of the importance of labor versus raw materials.

⁶³ See Rachel Brown, *The Cost of Making an iPhone*, INVESTOPEDIA (Apr. 7, 2024), <https://www.investopedia.com/financial-edge/0912/the-cost-of-making-an-iphone.aspx> [<https://perma.cc/MY4W-SFTB>].

⁶⁴ See *id.*

⁶⁵ See LOCKE, *supra* note 43, at 25.

⁶⁶ See Ahmed Sherif, *iPhone — Statistics & Facts*, STATISTA (Mar. 31, 2025), <https://www.statista.com/topics/870/iphone> [<https://perma.cc/zZ74-4TMA>].

⁶⁷ See LOCKE, *supra* note 43, at 21.

matter how durable our consumer goods become. Consequently, it would condemn virtually all modern industrial production as wasteful.⁶⁸

Render declines to take this more radical route. Instead, she pragmatically concedes that manufactured products legitimately have a finite lifespan even when the end result is some amount of unrecycled solid waste.⁶⁹ She urges us to focus on the incremental opportunity cost of the raw materials used to make goods whose lifespans are shorter than they would otherwise have been had the manufacturer not engaged in the strategy of planned obsolescence.⁷⁰ But this pragmatic concession makes her definitional challenge more daunting, leading us back to the many difficult line-drawing questions discussed above in Part I.

There is one final obstacle for understanding Render's proposal as an exercise in applied Lockean property theory. For Locke, the spoilage of natural resources in one's possession is a violation of the rights of other human beings in the state of nature.⁷¹ It represents an excessive appropriation of resources from the commons that deprives others of their equal right to enjoy the fruits of nature. Locke's remedy for excessive appropriation is for the resources to once again become common.⁷² Render's is different. Rather than returning misappropriated resources to the commons, she wants to make them *inalienable*.⁷³ There may be *policy* reasons for supporting this particular solution, but it is hard to justify in terms of Lockean theory.

This misfit between Render's solution and the mechanisms of Lockean property theory points toward a third topic, one that may offer hope for a more broadly Lockean pathway toward reconciling Locke's theory of appropriation with Render's specific concerns about planned obsolescence and waste. That pathway, however, would run through democratic politics rather than through the first-order application of property theory by common law courts. To understand why depends on appreciating the distinction Locke makes between property in the state of nature and property as it operates once we enter the world of constitutional self-governance.

III. LOCKEAN PROPERTY OUTSIDE THE STATE OF NATURE

Although property scholars often write about Locke's treatises of government as if his principal purpose were to elaborate a theory of private ownership, Locke's main goal was to defend democratic self-

⁶⁸ Even if we could achieve a system of perfect recycling and reuse of the raw materials that go into consumer products, this reading of Locke would seem to require a closed-loop cycle of sustainability for energy production as well.

⁶⁹ See Render, *supra* note 1, at 1315.

⁷⁰ See *id.*

⁷¹ LOCKE, *supra* note 43, at 28 (concluding that the spoilage of goods in someone's possession meant that the person "took more than his share, and robbed others").

⁷² See *id.* at 29.

⁷³ See Render, *supra* note 1, at 1305–10.

governance against royal absolutism.⁷⁴ His argument proceeds from a defense of private ownership in the state of nature to a justification for establishing a government whose purpose is to better safeguard those natural property (and other) rights.⁷⁵ Because natural rights survive after the establishment of civil society, only a *democratic* government can appropriately wield state power.

The existence of property rights in the state of nature plays a crucial enabling role in this argument, but Locke's key goal is to make a case for the necessity of democratic rule (or, at least, rule that is "democratic" as among property owners).⁷⁶ This goal explains why Locke affirms the power of democratic governments to regulate property once we have left the state of nature behind. For example, he grants the state the power to tax private holdings, so long as it does so with the "consent" of the governed, including through representative legislative processes.⁷⁷ Similarly, he contends that, once democratic governments are created, the specific property laws they establish will define and govern owners' rights, not natural property rights as they would have operated within the unmodified state of nature.⁷⁸ This system does not mean that natural entitlements — or the values underlying them — cease to exist once we are in the world of democratic governance. They continue to work as a check on the power of governments that operate without the consent of the governed.⁷⁹

Locke's democratic legislature is a robust one, endowed with all the powers it needs to address the complex line-drawing challenges presented by Render's discussion of waste. Render nevertheless endorses disregarding the legislature and pursuing a system of judicially administered inalienability as her solution to the problem of planned obsolescence.⁸⁰ Although she describes her article as merely the

⁷⁴ See GREGORY S. ALEXANDER & EDUARDO M. PEÑALVER, AN INTRODUCTION TO PROPERTY THEORY 36 (2012).

⁷⁵ See *id.* at 38, 42.

⁷⁶ See *id.* at 36.

⁷⁷ LOCKE, *supra* note 43, at 74.

⁷⁸ See *id.* at 27–28 (“[I]n some parts of the world, (where the increase of people and stock, with the use of money, had made land scarce, and so of some value) the several communities settled the bounds of their distinct territories, and by laws within themselves regulated the properties of the private men of their society, and so, by compact and agreement, settled the property which labour and industry began; and the leagues that have been made between several states and kingdoms, either expressly [sic] or tacitly disowning all claim and right to the land in the others['] possession, have, by common consent, given up their pretences to their natural common right, which originally they had to those countries, and so have, by positive agreement, settled a property amongst themselves, in distinct parts and parcels of the earth.” (emphases omitted)).

⁷⁹ Locke betrays no concerns about the “tyranny of the majority” and the threat it might pose to property rights. See *id.* at 74; see also KARL POLANYI, THE GREAT TRANSFORMATION 233 (Beacon Press 2001) (1944) (arguing that Locke's ideas of constitutionalism “were directed only against arbitrary acts from above,” not against democratic eruptions from below).

⁸⁰ See Render, *supra* note 1, at 1305–15.

straightforward application of existing doctrines,⁸¹ her prescription (the recognition of an inalienable reversionary interest in used consumer products⁸²) is fairly exotic and without obvious precedent.

Render cites cases and statutes showing that certain future interests (primarily in land) can be inalienable.⁸³ This assertion is true enough, but the sources she cites do not support her claim that “a reversionary interest in intentionally useless objects is *compelled* by a consistent application of the existing rules of property.”⁸⁴ The law typically assumes that when someone sells something, they intend to convey their entire interest in it.⁸⁵ As a consequence, the creation of reversionary future interests and the form those future interests take are typically ascertained by reference to the intent of the original grantor.⁸⁶ For example, in the case of *Mahrenholz v. County Board of School Trustees*,⁸⁷ on which Render relies, the court determined the kind of future interest that had been created (which it deemed to be inalienable) by carefully examining the original grantor’s intent in conveying its land in the first place.⁸⁸

Render says that — in the case of planned obsolescence — the grantor’s intent is irrelevant because it has no power to convey more than it owns. Because of its wasteful behavior in building an insufficiently durable product, what it owns is a time-limited device.⁸⁹ This is a creative argument. It seeks to split the item conveyed by the manufacturer into two elements: a conceptual element (the phone, which has a limited duration) and a physical element (the wasted material constituents of the phone, which revert to the grantor when the phone is obsolete). But the argument faces significant challenges, whether considered as a matter of Lockean theory or as a description of common law doctrine.

If the manufacturer violated some Lockean first principle in creating a wasteful phone, the Lockean remedy in the state of nature would be the reversion of the raw materials to the commons,⁹⁰ not the creation of an inalienable possessory interest in the malfessor. As I noted above, however, in Locke’s scheme, the positive law is where we should turn

⁸¹ See *id.* at 1268.

⁸² *Id.* at 1309–10.

⁸³ *Id.* at 1309–14.

⁸⁴ *Id.* at 1310 (emphasis added).

⁸⁵ See HERBERT THORNDIKE TIFFANY, 1 THE LAW OF REAL PROPERTY §§ 190, 192 (3d ed. 2024).

⁸⁶ See, e.g., *id.* (noting that the law disfavors the creation of future interests and will construe a grant to convey less than fee simple ownership only when there is a clear indication of intent by the grantor or testator).

⁸⁷ 417 N.E.2d 138 (Ill. App. Ct. 1981).

⁸⁸ *Id.* at 143 (“The terms used in the 1941 deed, although imprecise, were designed to allow the property to be used for a single purpose, namely, for ‘school purpose.’ The Huttons intended to have the land back if it were ever used otherwise.”).

⁸⁹ Render, *supra* note 1, at 1309.

⁹⁰ See LOCKE, *supra* note 43, at 46.

to determine the content of property rights once we have departed from the state of nature. As a matter of positive legal doctrine, I am not aware of any case or statute, and Render does not cite any, in which an inalienable reversionary future interest in the raw materials of a product is created as a penalty for wasteful design by the grantor. That is not to say such a doctrine could not be created, but it is not accurate to say that Render's proposal merely reflects the straightforward application of established principles of property law.

We would typically look to the democratic process to create such a novel doctrine, at least in the first instance. But Render suggests that her proposal for judicial intervention is necessitated by legislative inaction in the face of our ongoing wasteful excesses.⁹¹ There are practical reasons to be skeptical that common law doctrine — administered by judges — is the best way to address the many complex and dynamic questions raised in Part I. As I discussed above, what counts as planned obsolescence is a technically difficult and contextual question, constantly shifting (sometimes very quickly) with the evolving state-of-the-art technology for any given product.⁹² Evaluating and monitoring planned obsolescence seems far more at home in a modern administrative agency staffed by technical experts than in the common law courtroom overseen by judges with no special expertise in engineering or product design.

Apart from practical difficulties of institutional competence, however, it is not obvious that we should (or even can) give up on the democratic political process so easily. To the extent that the current political environment makes many legislatures unfriendly to the kinds of concerns about sustainability that animate Render's proposal, judicially imposed solutions are themselves likely to be short-lived and vulnerable to legislative override.⁹³ The effort to achieve gun control through private tort litigation provides an excellent recent example. Motivated by repeated legislative failures to regulate firearms, litigators and courts began to hold gun manufacturers liable through tort, but that litigation strategy was short-circuited by legislative curtailment of tort liability for

⁹¹ *Id.* at 1265.

⁹² *See supra* Part I, pp. 218–24.

⁹³ One argument that Render might explore is that judicial action in this area, while far from optimal, could force legislatures to act. New Jersey's experience with judicial invalidation of exclusionary zoning is sometimes held up as an example of this kind of interbranch dialogue. *See generally* Peter Buchsbaum, *Affordable Housing and the Mount Laurel Doctrine: Lessons Learned*, 57 WILLAMETTE L. REV. 201 (2021) (recounting the history of the doctrine, including the extended interaction between the New Jersey courts, legislature, and executive branch administrative agencies). But, in New Jersey, that dialogue was made possible by the New Jersey Supreme Court's reliance on the state constitution to ground its decisions. *See id.* at 220. Had the court relied on the common law of property, its politically unpopular intervention would likely have been answered by the kind of legislative override I describe in the text.

gun manufacturers in thirty-four states and at the federal level.⁹⁴ Although perhaps less satisfying in the short term, the most durable way to address the complex problems of resource waste resulting from planned obsolescence would be to work through the democratic process, not around it.

CONCLUSION

The planned obsolescence of smartphones and other electronic devices is not a narrow phenomenon. It is just the latest chapter in the much longer story of our shift over the course of the twentieth century toward an economy built around consumption and easy disposability. While manufacturers have encouraged (and profited) from this shift, we should not be too quick to let ourselves — the consumers — off the hook. Each of us as individuals, as families, and as communities, contributes in our own ways to sustaining our “throwaway culture.” And we share a collective responsibility for addressing it.

Planned obsolescence and the wastefulness of our contemporary consumer lifestyles are important and worthy topics, and Render is correct to make them the focus of her insightful analysis. But they are broad and amorphous categories of human behavior in which the lines of demarcation are indistinct and where there is plenty of blame to go around. Rather than devoting our efforts to convincing a few judges to impose fragile forms of liability on a handful of manufacturers, those of us concerned about the wastefulness of our consumer economy should focus on changing our own behaviors and on educating others about the perils of our present course and about the need for more sustainable practices.

Within our system of democratic self-governance, we do not need to achieve unanimity to make meaningful progress. We just need to persuade enough people to win elections and gain control of the levers of legislative power. At the broadest level, what we need is a cultural and political shift in which concerns about waste and sustainability will come to play a larger role in guiding the behavior of consumers and — crucially — voters. If we can accomplish that, legislators and judges will have no choice but to follow.

⁹⁴ For an extended discussion of the history of litigation as a strategy for regulating gun manufacturers, see generally Hillel Y. Levin & Timothy D. Lytton, *The Contours of Gun Industry Immunity: Separation of Powers, Federalism, and the Second Amendment*, 75 FLA. L. REV. 833 (2023). Professors Hillel Levin and Timothy Lytton describe how, in the wake of lawsuits in state and federal courts, the gun industry was able to obtain legislative relief in thirty-four states, capped by sweeping federal immunity from lawsuits. *See id.* at 841–42. As a result, they conclude, the strategy of private tort litigation to achieve gun control “has not worked.” *Id.* at 843.