

Circular Economy Disclaimers: Rethinking Property Relations and Becoming Circular in Common at the End of Cheap Nature

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ABSTRACT: Converging environmental crises have inspired a movement to shift the dominant economic form away from a linear “take-make-waste” model and toward more circular forms that reimagine discarded materials as valuable resources. With the coming “end of cheap nature” (Moore, 2015), this invitation to reimagine value as something more than “the political other of capitalist value” (Gidwani and Reddy, 2011) is seen as both an environmental necessity and an opportunity for green growth. Less often discussed is that the circular economy, in its reconfiguration of value, (Schindler and Demaria, 2020) also has the potential to reshape contemporary property relations (Hobson, 2020) and dismantle existent forms of circularity. In this paper, we explore shifts in property relations through an analysis of three strategies often imagined as key to facilitating the transition to circularity —extended producer responsibility, product service systems, and online resale. Each case synthesizes existing research, public discourse, and our findings from a series of focus groups and interviews with circular economy professionals. The cases suggest caution given the possibility that some circular economy strategies can concentrate value and control of existing materials stocks, dispossess those most vulnerable, and alienate participants in existent reuse, recycling, and repair markets. Drawing on and adapting Luxemburg’s concept of primitive accumulation, Tsing’s ideas about salvage accumulation, Moore’s work on commodity frontiers and recent research on commoning (Gibson-Graham et al., 2016; Nightingale, 2019), we argue that without careful attention to relations of power, politics, and justice in conceptualizations of both ownership and the collective actions necessary to transform our economic forms in common, transitions toward the circular economy have the potential to exacerbate inequality.

Keywords: circular economy, property, communing, transitions, equity, environmental policy

1. INTRODUCTION

The concept of the circular economy (CE) has gained considerable momentum. Concerns about biodiversity loss, resource depletion, plastic pollution, and climate change are just a few of the issues that have inspired proposals to shift economic systems away from take-make-waste models and toward less wasteful, more efficient, and regenerative economic systems. The idea has made policy inroads at multiple levels. In the EU, for example, the circular economy is a lynchpin of the European Commissions’ Green Deal and climate neutrality targets. The EU Circular Economy Action Plan includes provisions for improved product durability, green public procurement, extended producer responsibility, and enhanced materials recovery. The EU provides one example, but CE policy and practices are now at the forefront of environmental policy around the world and across multiple scales, from Chile and Japan to Beijing and Cape Town.

The circular economy concept has become dominant, in part, because it is conceptualized as a highly rational, cost-effective, win-win strategy to reduce waste, pollution, and inefficiencies by

1 reimagining discarded materials as resources. With the coming “end of cheap nature” as Jason
2 Moore (2015) calls it, this invitation to reimagine value as something more than “the political other
3 of capitalist value” (Gidwani and Reddy 2011:1625) is seen not only as an environmental
4 necessity, but as a promising scenario for green growth. This ecomodernist perspective, focused
5 on sustainability through economic growth is well represented in CE policy across scales
6 (Genovese and Pansera, 2021) and makes sense given that the World Bank estimates that less than
7 1/5th of all global waste is currently recycled (Kaza et al., 2018) which leads to the unnecessary
8 disposal of valuable resources—as well as all of the time, labor, energy, water, and emissions
9 embodied by materials throughout processes of extraction, production, distribution, and
10 consumption.

11
12 Despite its hopeful and highly rational vision for efficiency-driven sustainability transitions, the
13 circular economy is also the focus of significant critique given its technical and corporate-centered
14 approach to solving complex socio-environmental problems (Bauwens, 2021; Gutberlet et al.,
15 2020). Researchers have empirically examined the claim that the circular economy can decouple
16 economic growth from environmental harm, and have found that the efficiency- and technology-
17 focused approaches that have dominated circular economy actions to date have fallen far short of
18 reducing environmental impacts at the necessary scale (Alfredsson et al., 2018; Dauvergne, 2016;
19 Jackson, 2009; Mathai et al., 2020). These findings have led many scholars to advocate for
20 degrowth or steady-state approaches in affluent nations to reduce economic activity and thus
21 resource use and pollution (Hickel and Kallis, 2020; Valenzuela and Böhm, 2017).

22
23 Other critics have empirically demonstrated how some modernist approaches can shift
24 environmental burdens to more vulnerable societies in highly unequal global markets (Martinez
25 Alier 2021; Isenhour, 2016). Together, these analyses clearly illustrate that global citizens are
26 differentially implied in relations to both chains of waste production and the places that become
27 destinations of waste. But issues of equity and justice have “weak links” to dominant
28 conceptualizations of the CE (Schröder et al., 2019:81) and there are several blind spots in the
29 existing literature including a focus on human development and worker rights (Carenzo et al.,
30 2022; Padilla-Rivera et al., 2020). These gaps suggest the need for a reorientation of the circular
31 economy concept to focus not just on resource efficiency and the revalorization of waste, but also
32 on economic forms that ensure justice and improve social well-being and human development
33 (Berry et al., 2021; Geissdoerfer et al., 2017; Schroeder et al., 2018).

34
35 This paper does not wade deeply into already crowded debates about the generalized merits
36 ecomodernist and degrowth perspectives on the circular economy, given that others have already
37 characterized contrasting perspective in great detail (Friant et al., 2020). Instead, we hope to
38 contribute to the call to “rethink economic theory and practice for a sustainable circular economy”
39 by focusing on a less explored dimension of the CE literature— what the implementation of CE
40 strategies might mean for property relations and our collective prospects for becoming more
41 circular in common. The lack of scholarly and popular attention to how the circular economy, in
42 its reconfiguration of value, significantly reshapes contemporary property relations is well noted
43 (Hobson, 2019). If waste is the “new commodity frontier” (Schindler and Demaria 2020, Moore
44 2015) at the end of cheap nature—the associated shifts in valuation raise important questions about
45 who owns materials at various stages, as well as who has the ability to benefit from residual value.

In this paper, we explore shifts in property relations through an analysis of three cases. Each is a practice advocated as key to facilitating the transition to circularity. For the first case the paper focuses on the revaluation of discards. We illustrate how older debates about who owns and has access to waste are playing out again in the United States as Extended Producer Responsibility (EPR) for packaging legislation has recently gained traction. Our second case focuses on the diffusion of circular economy business models based on product services systems (PSS) rather than ownership. We examine how these novel business models may threaten the right to repair and fundamentally shift ownership from consumers to producers, further deskilling and alienating citizen from important means of livelihood. Our third case, focused on resale platforms, asks how the revaluation of vintage and designer clothing has not only reshaped producers' interest in maintaining ownership of their intellectual capital, but also how the movement of clothing to large resale platforms shifts value and ownership out of local communities.

Ultimately, we use these three case studies to offer some circular economy disclaimers. All three cases suggest caution given the potential for circular economy models to concentrate value and control of existing materials stocks while dispossessing and alienating participants in already existing networks of repair, reuse, and resale. To theorize these shifts in value and ownership we draw on and adapt Luxemburg's concept of primitive accumulation, Tsing's ideas about salvage accumulation (Tsing, 2015), and Moore's work on commodity frontiers (Moore, 2015). However, we argue that to achieve a sustainable circular economy, we need to supplement these analyses of capture and privatization by highlighting and elevating the important work being done in communities throughout the world to become circular in common (Gibson-Graham et al., 2016; Nightingale, 2019). We argue that without careful attention to issues of power, politics and justice in conceptualizations of ownership, transitions toward the circular economy have the potential to exacerbate inequalities and dismantle existing practices of circularity. By "staying with the trouble" (Haraway, 2016) and remaining attentive to issues of property and the value of the circular practices that already exist and collective attempts to create and protect commons, we might be able to improve CE policy such that circularity can enhance human development and well-being.

2. DATA AND METHODS

This paper draws on a multiple case study methodology (Stake, 1995) using three distinct, yet interrelated qualitative case studies to explore how circular economy programs and policies might shift contemporary property relations— and to ground theory as we think about economic alternatives. Case studies explore "bounded system[s] [...] through detailed, in-depth data collection involving multiple sources of information" (Creswell, 2007):73). Here, our cases are bounded conceptually by facets of the circular economy - that is, we use practices imagined as critical to circularity. These cases are not meant to serve as comparisons - instead, our multiple case study methodology allows for "different perspectives on the issue" (Creswell 2007:74) and is appropriate "to expand...theories and not to extrapolate probabilities" (Yin, 2014):21). Triangulation between multiple sources of information is a critical component of case study research, and allows for researchers to corroborate data (Yin 2014). Each of our cases rely on existing academic literature from around the world to root our analysis in historical context. We complement our narrative literature review (Sovacool et al., 2018) with original methods including public discourse analysis, focus groups, and interviews.

Table 1: Case Study Methods

Case Study	Methods
1. Extended producer responsibility	literature review; public discourse analysis; focus groups
2. Product service & rights to repair	literature review; public discourse analysis; focus groups; interviews
3. Resale and the right to sell	literature review; public discourse analysis; interviews

Methods: Public Discourse Analysis

In places like the United States, where discussions of circularity are still nascent, the public discourse around circular economies offers a unique opportunity to view sites of contestation and tension. Since practices like extended producer responsibility for packaging, product service systems and online fashion resale platforms are still emerging, they cannot yet be studied *in situ* in the US, but discussions about these practices are very much present in public discourse. As such, we utilized public discourse analysis (Pareschi and Lusiani, 2020) to help us understand emergent debates and claims-making related to circular economies in our case studies. This analysis of public discourse in the United States includes news media (Leitch and Bohensky, 2014), as well as public testimony for legislation, and self-produced content (op-eds; blogs) designed for a public audience.

To access public discourse, we conducted simple Google searches using targeted keyword related to each case study¹. Search results were reviewed to look for relevant content. Some returns were clearly not relevant (e.g. links related to “EPR Properties” a business and publicly traded stock had nothing to do with extended producer responsibility) but others links returned peer reviewed articles, public policy documents, news articles as well as blogs, op eds and commentaries. Relevant results were searched for discussions related to the ownership of materials. These searches were complemented with an analysis of 348 public comments in the EPR case, coming from the public legislative records of three US states which recently considered EPR legislation, Maine, Colorado and Oregon. Finally, in the resale case, public discourse analysis was complemented with digital event ethnography (Coleman, 2010; Paoli and D’Auria, 2021) including field notes and observations gathered while attending a two-day digital conference hosted by a large recommerce platform. All sources of public discourse were thematically coded, manually using simple word processing software, to understand how a range of actors have asserted or critiqued claims to waste as property.

Methods: Focus Groups

Our cases also draw on a series of virtual focus groups conducted over a six month period (10 groups, 58 individual participants) with US-based circular economy professionals, convened to explore opportunities and barriers associated with circular economy transitions (IRB #20200902, NSF Award #1934426). We developed a database of 204 US-based circular economy stakeholders identified based on their engagement in US circular economy discourse, including membership in professional networks, authorship of gray literature (business, organizational, and policy documents), as well as searches for sustainability-related titles at organizations making public efforts to build more circular economies. We worked to ensure that our invitation lists represented

¹ For the ERP case key search terms “EPR” and “property” and “ownership”. For the resale case keywords were “reuse” and “takedown notices”. For the product service case we used “product service” and “right to repair”.

1 a range of geographical, gendered and racial identities, though we note that many of our focus
2 groups had poor representation of BIPOC communities. Members of our research team transcribed
3 the focus groups using Trint. NVivo 12 software was used to analyze qualitative data through three
4 rounds of coding (Miles et al., 2013), first with inductive, open coding followed by two rounds of
5 purposeful, selective coding.

6 7 *Methods: Interviews*

8 We also draw on a series of virtual, one on one interviews with participants (N=8), who could
9 either not attend a group event or volunteered to provide additional information and context outside
10 of the group environment. Interview protocols closely mirrored the focus groups with semi-
11 structured questions. For the resale platform case study, we also draw on interviews with active
12 online resellers (n=8) who were recruited as part of another research project focused on second
13 hand economies (IRB #20180108, NSF Award # 1756933) (Authors, forthcoming). Interviews
14 were analyzed along with focus group transcript texts.

15 16 **3. RESULTS**

17 18 **3.1 CASE STUDY I: Extended Producer Responsibility (EPR) & the Ownership of Discards**

19
20 Due to recycling market crashes in the United States following China's "National Sword" policy,
21 rising costs for residential recycling, stagnating recovery rates, and the shuttering of recycling
22 services during the COVID-19 pandemic (Staub, 2020; SWANA, 2019; Tran et al., 2021)—
23 Extended Producer Responsibility (EPR) for packaging legislation has recently gained momentum
24 across the United States as a key strategy for circularity. By the summer of 2022, four US states
25 had passed legislation that holds producers accountable for the packaging waste they generate:
26 Maine, Oregon, Colorado and California.

27
28 The intention behind EPR for packaging is to shift some of the financial and administrative burden
29 for "end-of-life" (EOL) management from municipalities and taxpayers to producers. The
30 underlying assumption behind these programs is that when producers share the administrative
31 and/or financial burden of post-consumer management, they are incentivized to adopt more
32 circular practices through sustainable design and "closed-looped" systems (Tojo, 2004).

33
34 In 2021, shortly after Maine and Oregon passed the first mandatory EPR for packaging bills in the
35 United States, the Ellen MacArthur Foundation wrote that fee-based mandatory EPR schemes for
36 packaging waste are "the only proven and likely pathway to ensure the required funding to scale
37 [circular] systems to the extent required" (Ellen Macarthur Foundation, 2021).

38
39 Watching debates around various EPR for packaging legislation unfold in the United States, we
40 found that public testimony and focus groups paint a more complex, contentious, and evolving
41 story than the Ellen MacArthur Foundation declaration might suggest—one that ultimately hinges
42 on who owns the waste and has the right to control its management.

Disputes about ERP for packaging in the US most often center on the relative merits of two contrasting models². The first, which we'll call the state-centric, was adopted in Maine. It requires producers to take financial responsibility for end-of-life packaging management by paying fees based on the number and types of packages sold in the state. These funds are distributed to municipalities which continue to manage waste reduction, recovery, and recycling efforts. The second model, which we call market-centric was adopted in Colorado. It gives producers both fiscal and managerial responsibility. In this model producers typically fund a producer responsibility organization (PRO) controlled by the packaging industry which handles all financial matters as well as resource recovery and processing³.

The market-based model has significant international precedent in the EU and British Columbia. The West Coast Refuse & Recycling Coalition (WCRRC) released a report on the British Columbia model noting that, "Advocates of EPR programs for packaging and paper products in the U.S. point to [British Columbia] as the model for EPR in this country" (Miller, 2019:4) in part because the model has significant support from the consumer goods, beverage, and packaging industries.

Our focus groups and public comments on EPR legislation makes it clear that the producers of packaging overwhelmingly favor the market-centric model as a means to control the material stock and residual value of discards. Table 2 includes some exemplary quotes from public testimony, illustrating opposition to state-centric and support for market-centric models.

Table 2: Testimony in support of market-centric models or opposed to state-centric models

Testimony	Legislation	Comments
Consumer Brands Association	Opposition to ME 2104	Economic hardship: <i>L.D. 2104 ...creates an overly complicated cost-shift that would maintain the status quo for the state's municipal recycling systems...The extended producer responsibility (EPR) scheme outlined in L.D. 2104 puts all of the responsibility for cost on a single player, the consumer goods industry, which includes in-state businesses critical to Maine's economy and job-creation engine.</i>
Flexible Packaging Association	Opposition to CO HB1355	Industry control of management and advanced recycling: <i>FPA provides this testimony to improve HB1355, so that it provides the necessary elements for the improvement of collection and infrastructure investment and development of advanced recycling systems to allow for collection and recycling to a broader array of today's packaging materials.</i>
Flexible Packaging Association	Opposition to OR SB582	Industry control of management: <i>Developing end-of-life solutions for flexible packaging is a work in progress and FPA is partnering with other manufacturers, recyclers, retailers, waste management companies, brand owners, and other organizations to continue making strides toward total packaging recovery.</i>
Ameripen: Packaging Trade Association	Opposition to ME LD154, Support for ME LD1471	Industry control of management, financial hardship: <i>Additional collection services, frequency of collection and other collection factors have a clear nexus to municipally controlled decisions, constituent service and the ultimate costs of this area of a recycling program. The ... producers, under</i>

² Please note there is certainly more nuance in the range of potential models available. For example, XXXX released a graphic indicating a spectrum of alternatives. Here, we present these two "ideal types" to illustrate disputes about the ownership of discards.

³ Oregon has attempted to integrate these approaches with a "shared responsibility" model. California passed their bill just as this paper was being submitted so an analysis of that bill is not included here.

		<i>LD 1541, will have no control over those collection factors, yet are responsible for 100% of the costs.</i>
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The theme most relevant to our analysis in this paper is the desire for the industry to take managerial control over the recovered materials which would allow them to control both the processes utilized for recycling and to benefit from any residual value. Their language often implies that existing infrastructure has failed and that the scaling up of resource recovery will require investments in new technologies. Of particular interest is the ability for industry supported producer responsibility organizations (PROs) to include controversial “advanced recycling systems” such as gasification, incineration, and chemical recycling in the definition of recycling.

These themes were echoed in an opinion article published in The Hill in 2021 in response to a proposal to include an EPR model that prohibits chemical recycling in the Federal Break Free from Plastics Pollution Act. The author, Joshua Baca, the VP of the Plastics Division at the American Chemistry Council writes,

According to research from the American Chemistry Council, should the proposal become law, it could cost close to 1 million good-paying American jobs and wipe out up to \$413 billion in economic activity over the next few years... In another blow to innovation and sustainability, the Act would stymie advanced recycling technologies, innovative approaches that expand the types and quantities of plastic that can be recycled ... Hamstringing this technology would only mean more plastic waste, and greater reliance on new production (Baca, 2021)

But the market-centric model has not gone uncontested. In an explanation of her vote, Oregon Senator Kim Thatcher said, “*Whenever a large number of giant, multi-national corporations, NGOs, European Investment Bankers, multiple governments and bureaucracies are pushing for a policy change: beware.*” Table three provides examples of testimony in favor of state-centric models and opposed to market-centric models. Several themes emerged from these comments including the desire for oversight to ensure environmental goals are achieved, opposition to chemical recycling, support for the polluter pays principle, investments in improved infrastructure, and—most important for our analysis of shifting property relations—concern about the exclusion of existing actors from recovery and recycling markets.

Table 3: Testimony in support of state-based models or in opposition to market-based models

Testimony	Legislation	Comments
US Public Interest Group	In support of OR BS582	Oversight: <i>Additionally, programs must ensure accountability, transparency, and oversight. Polluters should not be allowed to write their own rules to maintain the status quo</i>
Maine Resident	In support of ME LD 1541 and in opposition of ME LD 1471	Financial responsibility, oversight: <i>When a company produces wasteful packaging, it's taxpayers that clean up the mess, subsidizing recycling to the tune of 16 million dollars a year in Maine...this bill would relieve that tax burden ... and place it on the megacorporations responsible for the waste in the first place. Coincidentally, these companies also happen to be the same ones lobbying fiercely against this bill, and they even wrote their own bill to counter this one, LD 1471... writing their own bill...would be just like a drug enforcement bill written by Pablo Escobar.</i>
Institute of Scrap	In opposition	Potential exclusion of existing actors: <i>ISRI does not support product stewardship policies that disrupt the current recycling infrastructure,</i>

Recycling Industries	to ME 1471	<i>such as extended producer responsibility programs that either target, include, or disrupt the recycling of materials or products that are being successfully recycled and consumed in existing markets</i>
Surfrider Foundation	In support of ME LD 1541	In opposition to incineration and advanced recycling: <i>The Surfrider Foundation is grateful that LD1541 would phaseout incineration as an allowable alternative collection method ... We would recommend that §8 be lightly amended to also explicitly disallow the use of chemical conversion ... The plastics industry is heavily promoting this conversion technology .. referring to the practice as “advanced” or “chemical” recycling. Chemical conversion ...leads to new air and water pollution problems while not reducing the production of single-use plastic packaging</i>

Many themes that run through these public testimonies, but central to our argument here is who should have control over the resources themselves and who has the opportunity to benefit from their recovery. Our research team gained additional insight into these debate through our interactions with several organizations skeptical of EPR. Not only do these organizations write frequent editorials about EPR for venues like *Waste Dive* and *Resource Recycling* but their representatives also participated in our focus groups. Speaking about EPR one skeptic said, “*I don't support EPR because the companies that get this stuff back through EPR, they crush it, they remove it from the U.S. market and it is never usable again ... Great stuff, I hate EPR*” (FG7 May 17, 2021).

While not opposed to EPR in theory, the Institute for Local Self-Reliance has been warning the recycling industry for decades about the potential for corporate-controlled EPR to exclude local businesses and entrepreneurs who have made their living by salvaging the residual value of discards – reflecting the scholarly literature which suggests that CE transitions can have unintended consequences for people who rely on waste for their livelihoods (Schröder et al., 2019). In their analysis of British Columbia’s proposed EPR legislation in 2012 they wrote,

The replacement of already-operating source-separation collection systems with single-stream curbside collection of EPR means that opportunities for repair and reuse at the local level are bypassed, as items are at least meant to be shipped straight to steward-operated depots...focusing on end-of-life recycling. This obviously threatens local entrepreneurial activity... A truly sustainable approach to managing discards requires that resources be intercepted “at the source” and put toward economic development and job creation at the local level, not shipped to faraway processing centers (Souto et al., 2012).

Another organization, Urban Ore, warned recyclers directly in a 2012 blog post which read:

Gird your loins, recyclers, if you want to keep control of your industry or even the resources you personally harvest. Or get ready to say “uncle,” and with a smile, too, if you want to stay in business (Entropy 2012:1).

These debates about control over recyclables in the US and Canada echo earlier disputes about the ownership and value of waste from around the world. The waste studies literature abounds with examples of informal waste workers —pickers, haulers, middlemen, repair people, resellers, logistics providers— who enact a critical piece of the conceptual circular economy in the absences of state or private investments or due to failures of municipal waste services. Waste pickers are estimated to number as many as 15 million people in ‘developing countries’ (Medina, 2007).

1 Together they are estimated to collect between 10-30% of recyclable materials from global waste
2 streams (Carenzo et al., 2022; Dias, 2016). Despite these strong positive contributions to
3 circularity, significant growth in waste generation in rapidly developing economies has led many
4 municipalities to privatize waste management systems in the name of circularity (Velis, 2017).
5 But because most cities lacked infrastructure, as Schindler (Schindler, 2022:1) writes, “this has
6 often meant little more than transferring the ownership of waste – or granting the right to collect
7 waste – to private firms.” The exclusion of informal workers is often rationalized based on a
8 “moral order of ‘good’ and ‘bad’ environmental behavior” that names informal forms of waste
9 labor illegitimate (Alexander and Reno, 2012). Those determinations of legitimacy are often
10 highly racialized and classed (Carenzo et al., 2022; Resnick, 2021) and can result in the
11 criminalization and harassment of the most vulnerable members of society (Gutberlet, 2016).
12

13 Indeed, recycling has moved away from an environmental social movement driven by committed
14 local activists and entrepreneurs and increasingly toward an in a profit-oriented enterprise driven
15 by large corporations (Pellow, 2004). But intensifying property claims by the state and private
16 corporations have resulted in the exclusion and stigmatization of waste entrepreneurs,
17 impoverishment, loss of collective labor power, and —as a result —significant contestations over
18 waste (Dias, 2016; Schindler and Demaria, 2020).
19

20 As our case study on ERP for packaging in the US suggests, these examples of value enclosures
21 and exclusion aren’t limited to the developing world. A 2016 article in the New York Times
22 highlighted disputes over trash among New York City scavengers and the city’s Sanitation
23 Department. Scavengers were gathering recyclables from public receptacles, sidewalks and city
24 parks. While they argued they were providing an essential public service, the city accused
25 scavengers of “stealing recycling’s future” and participating in a “sophisticated mob” that removes
26 the most valuable resources from the waste stream (Nir, 2016).
27

28 In some cases, waste pickers have resisted the enclosure of the waste commons. In Australia waste
29 pickers were able to successfully claim ownership. In Columbia pickers organized to ensure their
30 right to work in the waste commons (Lewis and Rauturier, 2019). Waste entrepreneurs typically
31 view discarded materials as a common-pool resource and the services they offer as a positive
32 service to the community and a public environmental good. However, they also see the need for
33 governmental regulation to create a restricted access system that is fair and ensures the equitable
34 allocation of resources (Lane, 2011). Scholars working with waste entrepreneurs throughout the
35 global south have therefore advocated for circular economy policy that recognizes the value of
36 existing practices, is inclusive, and ensures that all actors contributing to circularity are legitimate
37 participants in the design and implementation of waste management policies (Carenzo et al., 2022).
38

39 In our case study advocates for state-based EPR for packaging models similarly seem to be most
40 concerned about ensuring that circularity does not privatize the waste such that access is limited
41 to only corporate actors and producer responsibility organizations, jeopardizing the livelihoods of
42 the all the people who operate current recycling systems.
43

44 **3.2 CASE STUDY II: Product Service Systems and the Right to Repair**

45 Proponents of the circular economy frequently advocate for product service systems (Bocken et
46 al., 2016; Vellis and Vrancken, 2015). In these alternative business models, the customer contracts
47 with a business to purchase a service provided by a product, rather than the product itself. So, for

1 example, rather than purchasing a television, the consumer contracts for the use of a television. In
2 this model the customer is theoretically freed from the burdens of ownership and maintenance.
3 Simultaneously, the producer is incentivized to provide a more durable, long-lasting product that
4 does not need frequent maintenance or replacement. So, rather than engaging in a single purchase,
5 the customer would enter into a long-term relationship with a product manufacturer.

6
7 Much like Extended Producer Responsibility for packaging, product service systems also extend
8 the manufacturer's responsibility at the end of life. However, unlike EPR they ensure that
9 producers maintain all rights to the goods and all component parts. As Vellis and Vrancken
10 (2015:773) write, while there is "nothing fundamentally wrong with such rights, it constitutes a
11 fundamental change to the institutions of waste ownership.... and it further extends on the previous
12 waves of for-profit and value extraction processing of waste flows".

13
14 These new access-based business models are likely to have significant implications for consumers
15 (Hobson 2019) but the role and perspectives of the consumer in the circular economy has been
16 largely assumed, rather than researched (Hobson and Lynch, 2016; Kirchherr et al., 2017). Not
17 only do service contracts bind the consumer to a specific company, shifting power relations away
18 from the citizen-consumer and toward corporations, but they also have significant implications for
19 ownership. Given that consumers will no longer own many of the goods they use, they would also
20 no longer have the right to repair or modify them, to utilize parts, or to repurpose them at the end
21 of their useful lives.

22
23 While the implications of these shifts might not be readily apparent, research on second hand
24 markets suggests that the various pursuits that compose reuse and repair practices are associated
25 with significant community and localized benefits which include flexible forms of labor, the
26 redistribution of value within the community, local job generation, and economic multiplier effects
27 (Berry, 2022; Isenhour and Berry, 2022; Millar, 2018). Small and independent reuse entrepreneurs
28 often do much more than pick value out of discards, repair iPhones, fix small appliances and mend
29 clothing. They provide local employment and tax revenue and contribute to the community by
30 turning donations into essential funding for a wide range of social causes.

31
32 However, there are several factors that threaten these locally valuable repair and reuse markets,
33 including product service systems. First is simply the difficulty associated with repairing
34 contemporary goods. Producers intentionally design for obsolescence or release products that are
35 impossible to repair independently (Graziano and Trogal, 2019). In these cases, it is typically
36 more convenient for consumers to replace rather than repair their goods, contributing to growing
37 waste streams (Zapata Campos et al., 2020). The circular economy concept is intended to address
38 this problem by closing and slowing resources loops. One of our focus group participants lamented
39 how many products are intentionally designed to be disposable such that they can't be repaired or
40 recycled. He said,

41 *When we talk with manufacturers that do the right thing, they say that they feel*
42 *disadvantaged in the market because their competitors don't have to. Apple's air pods*
43 *involve plastic and batteries. They're not - you can't recover the plastic from them because*
44 *the battery is glued to the plastic. No electronics recycler that I know of wants to touch air*
45 *pods in any way. You can't - you shouldn't stick them in solid waste and you shouldn't stick*

1 *them in the blue bin and the electronics recyclers don't want them...So this is a problem.*
2 *It's an unethical product. It should be illegal. It's not. (FG 5 April 1, 2021).*
3

4 Second, as outlined in the previous case study, some proposals to close resource loops like EPR
5 can have the, perhaps unintended, consequence of foreclosing independent opportunities for reuse
6 and repair outside of corporate control. A 2018 Waste Dive article, for example, details how a
7 California EPR program for mattresses allowed for shredding and burning, making it impossible
8 for reuse entrepreneurs to access component materials for reuse. In contrast to the job-intensive
9 process of deconstructing mattresses to access the cotton, foam rubber, steel frames and wood for
10 reuse and recycling, this “circular strategy” of converting mattresses to energy foreclosed
11 opportunities for local entrepreneurs (Seldman, 2018). Similarly, Müller (2021) documents the
12 case of electronics EPR in Bolivia where multinationals require documentation for the “post-
13 consumption” status of all components. While many recyclers are only interested in extracting
14 valuable metals, they cannot sell other components or parts to repair workshops without violating
15 traceability requirements. Müller writes, “cutting the supply of original spare parts and reducing
16 their usage in local refurbishing and remanufacturing is in the interest of the multinationals, which
17 aim at selling devices with ever-shorter product lifespans” (2021:48). In this arrangement,
18 repeated across the world, EPR laws favor large producers and their contractors allowing them to
19 monopolize access to components and reduce opportunities for independent repair.
20

21 Finally, in an intensification of these trends, product service systems internalize repair entirely,
22 precluding the right to repair. We heard from several participants in our focus groups that
23 corporations are increasingly taking an interest in service-based models as a means to capture the
24 aftermarket revenues associated with repair. However, as Bradley and Persson write, “relating this
25 vision of the circular economy to social equity, an increasingly specialized and corporate-centered
26 society runs the risk of people losing the means and skills to provide for themselves outside the
27 corporate monetized sphere” (2022:4). Similarly, Niskanen and colleagues (2021:9) suggest that
28 in PSS, “rather than building relational engagement and skilled agency, repair is achieved by
29 consumers relinquishing possession of goods to corporations, taking instead the role of service
30 users or leasers. These enclosed systems of repair diminish existing repair and reuse work that
31 provides local jobs and significant co-benefits at the local level”.
32

33 These concerns about the ability to repair products designed for obsolescence, corporate
34 dispossession of repair entrepreneurs under EPR, and the prospect of deskilling and corporate
35 dependency under product service systems have helped to strengthen the right to repair movement.
36 Repair initiatives have emerged as a new form of collective organization in opposition to both
37 unsustainable levels of production-consumption-disposal and shifts in ownership structures that
38 make independent repair untenable. One focus group participant was vehement that discarded
39 goods no longer belong to the producer, saying:

40 *I think local control is important, but I think severing the relationship between the*
41 *manufacturer sense of ownership is also important. Manufacturers have been objecting to*
42 *us being able to fix our stuff on the theory that they control it... I resist the idea of control.*
43 *Once you hand something back or you give it or you donated to somebody, it no longer*
44 *belongs to Dell. It doesn't belong to Apple, it doesn't belong to GE. So let's at least make*
45 *sure that that is clear (FG7 May 17, 2021).*
46

1 However, the politics of repair are contentious (Bradley and Persson, 2022; Zapata Campos et al.,
2 2020). While the EU has provisions for repair in its Circular Economy Action plan and US
3 President Joe Biden directed the Federal Trade Commission in the summer of 2021 to draft
4 regulations which prohibit corporations from preventing repair by consumers and independent
5 repair businesses—advocates argue these gestures are not enough (Seddon and West, 2021). More
6 recently the Fair Repair Act was introduced into the US Senate and is currently under committee
7 consideration. However, our participants tell us that lobbying against the impending legislation is
8 intense. One participant who runs a non-profit dedicated to helping people fix their own
9 electronics estimated that anti-right to repair lobbyists represent industries with over 10 trillion
10 dollars in market capitalization. He said, “*the US government is probably the only size gorilla to*
11 *go toe to toe with Godzilla*” (FG7 May 17, 2021).

13 **3.3 CASE STUDY III: Resale Markets and Intellectual Property**

15 In recent years, growth in online secondhand markets - so called "recommerce" - has been exponential.
16 Clothing resale was an \$18 billion industry in 2017, and by 2021 it had doubled to \$36 billion (ThredUp,
17 2021). The sector is projected to double again in the next five years (Grant et al., 2022; Kumar, 2021),
18 which would signify a growth rate eleven times faster than new clothing retail growth (ThredUp, 2021 p.4).
19 Recommerce includes a number of redistributive arrangements, from auction sites like eBay, to
20 consignment models like ThredUp, and peer-to-peer exchanges like Poshmark, Mercari, and Depop. While
21 promising sustainable fashion through frictionless logistics, recommerce platforms have the potential to
22 upend existing property relations with important consequences for those who make a living - or just get by
23 - reselling online.

25 The legal right for individuals to sell used items comes from first sale doctrine in patent and copyright law,
26 which includes "the ability to stock, display, and resell" used items "based on the principle that trademark
27 owners should not be able to control downstream sales of their goods" (Liebesman and Wilson, 2012:188).
28 In short, first sale doctrine states that people have the right to sell used goods acquired legally once the
29 original owner has sold the product (Sato, 2021). In the context of brick-and-mortar secondhand stores, the
30 first sale doctrine has been largely unproblematic. The display and sale of used goods in physical stores has
31 a limited reach, and it is difficult to argue that customers might mistake a secondhand store as the original
32 manufacturer of the goods in question. Yet the movement to recommerce platforms has muddled property
33 rights and relationships with regards to used goods. The scope and speed of recommerce mean that it can
34 compete with online sales of first-order goods (Sato, 2021; Liebesman & Wilson, 2012), presenting
35 opportunities for first-order retailers to exercise powerful advantages over small-scale resellers.

37 The largest recommerce platforms are what Srnicek (Srnicek, 2016) describes as "lean platforms," which
38 "attempt to reduce their ownership of assets to a minimum and to profit by reducing costs as much as
39 possible" (2016:49-50). These lean platforms include sites like Facebook Marketplace, eBay, Etsy, and
40 emerging platforms like Poshmark, Mercari, and Depop (Roshitsh, 2021). Importantly, these sites do not
41 own the products sold on their platforms - instead they match buyers with sellers in exchange for a
42 percentage of the sale price (Yrjölä et al., 2021). Such "asset-light" platforms (Yrjölä et al, 2021:762)
43 facilitate sales but do not do the work of finding, purchasing, cleaning, and organizing used goods. Instead,
44 the labor burdens and risks are placed on individual resellers, who must acquire stock, write descriptions,
45 take photographs, and negotiate with buyers without promise of payment until a sale is made. Resellers use
46 considerable knowledge to select sought-after goods from a variety of sources, and conduct research on
47 "comps" - comparable items - to determine the nature and value of their finds. This time-intensive labor has
48 become risky, however, as the growth of online secondhand markets has made used goods an increasingly
49 lucrative resource frontier.

1 Online secondhand markets have become a space of contestation over property rights, as evidenced by
2 reports of takedown notices (Sato, 2021) on digital resale platforms. In these disputes, trademark owners
3 of used goods have refuted the rights of resellers to offer used goods for sale (Liebesman and Wilson, 2012;
4 Sato, 2021). While often couched in a concern over counterfeit used goods (see, for example: (Dunham,
5 2021; Kumar, 2021), trademark holders may also dispute sales based on the potential for buyers to be
6 confused by whether or not the reseller is associated with the trademark holder (Liebesman & Wilson,
7 2012). Yet despite purported concerns over consumer safety and information, Liebesman and Wilson argue
8 that these takedown notices go "beyond trademark bullying and are more than merely stopping a merchant
9 from using the owner's mark - the goal is to remove the reseller's goods from the market altogether"
10 (Liebesman & Wilson, 2012 pp.161-162). Indeed, the rapid rise of recommerce has led many brands to
11 establish their own internal resale platforms, like Patagonia's Worn Wear, Eileen Fisher's "Renew," and
12 Levi Strauss & Co.'s Secondhand. These platforms are discursively oriented toward sustainability and
13 circularity, but are made profitable by a market that is growing exponentially (Grant et al., 2022; Roshitsh,
14 2021; Siegal, 2019).

15
16 Because platforms can be held liable for trademark infringement if they continue to host counterfeit and
17 illegally-obtained goods (Liebesman & Wilson, 2012), they have developed reporting procedures for
18 trademark holders to register complaints. Lean platforms operate using a "hyper-outsourced" model
19 (Srnicek, 2016 p.76) where costs and risks are placed on - in the case of secondhand markets - resellers. In
20 the context of contested property, lean platforms "want to ensure that they are viewed merely as 'conduits'
21 between the buyer and seller with no direct control over the listed goods, and will usually remove listings
22 based on any accusation by the mark owner" (Liebesman & Wilson, 2012 p.180). Platforms like eBay and
23 Poshmark have dedicated copyright policies that assure trademark holders of their rights to dispute the sale
24 of material (eBay, 2022; Poshmark, 2022). Yet while reporting a trademark violation is a simple process
25 for powerful companies, small-scale resellers face enormous hurdles in trying to dispute these claims (Sato,
26 2021; Liebesman & Wilson, 2012; Chen, 2020). Further, for many of the individuals who make a living, or
27 simply get by, reselling used goods online, the losses associated with removed listings can be devastating
28 (Liebesman & Wilson, 2012). Without mechanisms to assert their rights to property, and to the
29 redistribution of used goods, resellers are left with a stock of goods they cannot sell.

30
31 These issues with resale platforms are in line with Anna Tsing's description of "salvage accumulation,"
32 where "lead firms amass capital without controlling the conditions under which commodities are produced"
33 (Tsing, 2015):63). Tsing describes sites of salvage accumulation as located both inside and outside of
34 capitalism - in what she calls "pericapitalist spaces" (2015: 63). Resellers move from spaces that stretch our
35 understandings of capitalist relations, like yard sales and the Goodwill "Bins", where goods change hands
36 for little or no money, and under conditions that often don't resemble shopping (Herrmann, 1997). Lean
37 platforms profit from the labor of resellers finding, fixing, cleaning, photographing, and describing used
38 goods. These acts of scavenging and digging for used goods are a kind of foraging - a wild harvest of "abject
39 capital" (Giles, 2020) abandoned by markets and rendered valuable again through the work of resellers. Yet
40 as online resale markets grow and transform, they are becoming domesticated by the logic of capital. Recent
41 US legislative efforts have targeted online markets to ensure that the goods sold are legible to consumers,
42 firms, and markets. The SHOP SAFE Act of 2021, for example, requires individuals to provide the
43 manufacture location of goods sold, other important details, as well as personally identifying information
44 about sellers. Similarly, the INFORM Consumers Act seeks to "collect, verify, and disclose certain
45 information regarding high-volume third-party sellers of consumer products to inform consumers" (Coons
46 and Tillis, 2021). These legislative efforts frame their efforts in terms of consumer safety, yet they represent
47 a subtle shift in ideas about who can claim (and resell) property. An underlying assumption of these efforts
48 is that consumers can be best served by products coming directly through manufacturers rather than through
49 third parties.

4. DISCUSSION: Retheorizing Property for Creating a Circular Society in Common

As we hope these three case studies make clear, the process of waste revalorization for a more circular economy is a highly political process that has motivated more actors to collect and capture waste (Ravasio and Moreau, 2017). In that process, more powerful actors are able to capture value through property contests. Schindler and Demaria (2020) outline how these conflicts reconfigure socio-metabolic systems and all their attendant flows of energy, emissions, labor and materials—all too often resulting in the dispossession of those who are exposed to waste and labor to extract its value. They write, “put simply, powerful actors must typically impose new institutions (e.g. waste ownership) and/or introduce waste management technology (e.g. incinerators) which reworks material flows (2020:54). The environmental justice atlas lists more than 200 waste related conflicts around the world. Co-founder Martinez-Alier has argued that circularity is not likely and resource conflicts will certainly continue in an entropic system that produces pollution and extracts resources from commodity frontiers (Martinez-Alier, 2021).

Several scholars critical of the circular economy concept and its potential to exacerbate social and economic inequalities have been inspired by the work of Jason Moore (2015) who has written persuasively about the end of Cheap Nature—which he imagines will constitute a final crisis of capitalism. Moore understands capital as a continuous process of expansion, constantly seeking new commodity frontiers or new forms of Cheap Nature to, as he says, “extend the domain of appropriation faster than the zone of exploitation” (Moore 2015: 217).

Marxist inspired theorists have long helped to illustrate the various means by which value can be appropriated in capitalist systems. Beginning with Marx’s outline of how the capitalist class extracts value by appropriating the surplus labor of workers (the unpaid labor expended beyond the sale price of the good) and then utilizes that capital to enclose and legally capture common property through primitive accumulation (Marx, 1992)—scholars have outlined a wide range of mechanism that seem potentially relevant to the circular economy case studies presented in this paper. In *The Accumulation of Capital*, Rosa Luxemburg (Luxemburg, 2003) posited that the expansion of capital would depend on the ability of the system to expropriate resources, not just the surplus labor of domestic workers reinvested to expand production, but also through the creation of new frontiers of exploitation in the developing world. Luxemburg’s conceptualization of accumulation thus hinged on the ability of capitalist systems to set up parasitic relationships between capitalist and non-capitalist spheres, extracting resources and creating relations of dependency, often rationalized with racist and colonial logics. Dependency and World Systems theories further developed our understanding of the mechanisms of appropriation, dispossession and accumulation (Frank 1966; Wallerstein 1974). More recently Harvey’s concept of accumulation by dispossession (2006) and De Angelis’ work on “the new enclosures (2004) has enjoyed considerable attention, highlighting the dual character of capitalism that at once exploits by alienating people from productive resources beyond their own labor at the same time that it expropriates by producing a moral order of differentiation based on racialized, classed and gendered notions of legitimate and illegitimate resource access and utilization (Wang, 2018).

Schindler and Demaria argue that without a new commodity frontier to exploit—which might fuel the next expansionary phase of capitalism—attention has turned toward making existing systems more efficient by capturing lost value. We have suggested that we may indeed be moving increasingly toward a time when accumulation is tied not only to the appropriation of surplus labor, the exportation of surplus production or the accumulation of nature, but increasingly the very detritus of a failing system (Isenhour and Berry, 2021). Unfortunately, as our case studies illustrate, this new focus on improving the efficiency of the system is often at the expense of people who have long been practicing circularity as discards are increasingly claimed as corporate property, essentially excluding informal workers—resellers, repairers, cleaners, waste pickers—whose livelihoods often depend on this work and whose labor creates significant local social, economic and ecological value (Anantharaman, 2017; Berry, 2022; Millar, 2018).

1
2 Here we argue that it is certainly important to study and bring light to these processes of accumulation,
3 expropriation and exploitation through shifting property relations and reconfigurations of socio-metabolic
4 systems. However, we also urge caution. Limiting our understanding of these shifting property relations
5 at the end of cheap nature also has the potential to consolidate the power of capitalism and create a deficit
6 framing of the important work that is already being done to create a circular future in common. Scholars
7 like Anna Tsing (2015) and JK Gibson-Graham (2016) have challenged the capitalocentrism present in
8 much of the critical scholarship, arguing there is a danger in attributing theoretical primacy to the power of
9 a singular capitalist system. When capital is the only lens through which to understand our socio-economic
10 systems or the potential for a politics of transformation, we neglect a wide range of economic practices or
11 find ourselves forced to define them relative to capitalism (as either within it, or outside it). In reality
12 empirical work makes clear that there are a wide range of economic practices and communing efforts that
13 deserve our analytical attention which may not conform to predictions based solely on analyses of
14 commodity frontiers and capitalist capture. Some practices are clearly capitalist, others are clearly non-
15 capitalist and there are a wide range of practices that we might consider peri-capitalist—existing in the
16 spaces in between (Tsing 2015). But Gibson-Graham and colleagues argue that defining all economic
17 forms relative to capitalism may limit the potential for transformative politics. They write, “A politics
18 grounded in capitalocentrism seems to offer little in the way of helping us to reposition ourselves for living
19 on a climate changing planet. Might thinking about the commons and a politics of the commons outside the
20 confines and strictures of capitalocentrism help us reimagine our ways of living on this planetary home?”
21 (2016:32).

22
23 Anna Tsing’s concept of salvage accumulation is useful, recognizing not only the tendencies of capital to
24 commodify, appropriate and alienate, but also to understand how the process of capitalization may also
25 inspire non-capitalist spaces when it creates the “capitalist other of value” - places, spaces and people seen
26 as wasted (2015). But these sites of ruination are also sites of value generation as our cases make clear.
27 The question is, can they, in the movement toward a more circular economic system be kept open to the
28 commons, to those who saw value long before discussions about materials efficiency and circular economy?
29 JK Gibson-Graham’s sustained interventions encourage us to not only focus on the hegemony of capital,
30 but to valorize the affirmative, experimental, and enabling practices that abound in communities around the
31 world.

32
33 If we follow this logic, it opens up space for understanding that attempts to shift our collective livelihood
34 strategies toward more circular forms can take place under a variety of property regimes. The capitalist
35 capture of value through privatization is not the only route to realizing a circular economy. Beyond the
36 legalistic conceptualization of property that creates a false dichotomy between private property and
37 collective ownership, it is important to recognize that property as much more than a human’s rights to
38 things. Ultimately, property relations are essentially about the rights of people in relation to one another.
39 Ownership cannot be disentangled from concepts of distribution which is ultimately determined by status
40 hierarchies that establish social orders of power and control (Gluckman 2004). Property is about these social
41 assignments of rights and entitlements between people.

42
43 Scholars of property have long problematized the idealized dichotomy between the commons and private
44 property but recent scholarship suggests that the process of commoning, in this case through repair as a
45 political practice and potential transition agent (Niskanen et al 2021) may be exactly what is necessary to
46 stem corporate capture of the latest commodity frontier. Contrary to the claim that a large government may
47 be the only force strong enough to counter the Goliath-like industrial lobby, several scholars suggest that
48 commoning, the process by which people work together to share resources and provide mutual aid, may be
49 a more promising relational approach that “transgresses the boundaries of different forms of property”
50 (Gibson-Graham et al 2016).

1 Economic theory for creating a sustainable circular economy must include an understanding of capitalist
2 capture, but also the inclusive and commoning practices that exist or are emerging in response to
3 privatization and exclusion—all over the world. While both perspectives are clearly important, it is the
4 prospect of commoning that is more likely to promote an inclusive politics of circularity that can enhance
5 human development and ensure equitable access to livability in the Anthropocene.
6
7
8

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