

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

3
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9
10 **ABSTRACT:** Converging environmental crises have inspired a movement to shift the dominant
11 economic form away from a linear “take-make-waste” model and toward more circular forms that
12 reimagine discarded materials as valuable resources. With the coming “end of cheap nature”
13 (Moore, 2015), this invitation to reimagine value as something more than “the political other of
14 capitalist value” (Gidwani and Reddy, 2011) is seen as both an environmental necessity and an
15 opportunity for green growth. Less often discussed is that the circular economy, in its
16 reconfiguration of value, (Schindler and Demaria, 2020) also has the potential to reshape
17 contemporary property relations (Hobson, 2020) and dismantle existent forms of circularity. In
18 this paper, we explore shifts in property relations through an analysis of three strategies often
19 imagined as key to facilitating the transition to circularity —extended producer responsibility,
20 product service systems, and online resale. Each case synthesizes existing research, public
21 discourse, and our findings from a series of focus groups and interviews with circular economy
22 professionals. The cases suggest caution given the possibility that some circular economy
23 strategies can concentrate value and control of existing materials stocks, dispossess those most
24 vulnerable, and alienate participants in existent reuse, recycling, and repair markets. Drawing on
25 and adapting Luxemburg’s concept of primitive accumulation, Tsing’s ideas about salvage
26 accumulation, Moore’s work on commodity frontiers and recent research on commoning (Gibson-
27 Graham et al., 2016; Nightingale, 2019), we argue that without careful attention to relations of
28 power, politics, and justice in conceptualizations of both ownership and the collective actions
29 necessary to transform our economic forms in common, transitions toward the circular economy
30 have the potential to exacerbate inequality.

31
32 **Keywords:** circular economy, property, communing, transitions, equity, environmental policy

33
34 **1. INTRODUCTION**

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

45
46 The circular economy concept has become dominant, in part, because it is conceptualized as a
47 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 (Schröeder 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.
46

1 In this paper, we explore shifts in property relations through an analysis of three cases. Each is a
2 practice advocated as key to facilitating the transition to circularity. For the first case the paper
3 focuses on the revaluation of discards. We illustrate how older debates about who owns and has
4 access to waste are playing out again in the United States as Extended Producer Responsibility
5 (EPR) for packaging legislation has recently gained traction. Our second case focuses on the
6 diffusion of circular economy business models based on product services systems (PSS) rather
7 than ownership. We examine how these novel business models may threaten the right to repair and
8 fundamentally shift ownership from consumers to producers, further deskilling and alienating
9 citizen from important means of livelihood. Our third case, focused on resale platforms, asks how
10 the revaluation of vintage and designer clothing has not only reshaped producers' interest in
11 maintaining ownership of their intellectual capital, but also how the movement of clothing to large
12 resale platforms shifts value and ownership out of local communities.
13

14 Ultimately, we use these three case studies to offer some circular economy disclaimers. All three
15 cases suggest caution given the potential for circular economy models to concentrate value and
16 control of existing materials stocks while dispossessing and alienating participants in already
17 existing networks of repair, reuse, and resale. To theorize these shifts in value and ownership we
18 draw on and adapt Luxemburg's concept of primitive accumulation, Tsing's ideas about salvage
19 accumulation (Tsing, 2015), and Moore's work on commodity frontiers (Moore, 2015). However,
20 we argue that to achieve a sustainable circular economy, we need to supplement these analyses of
21 capture and privatization by highlighting and elevating the important work being done in
22 communities throughout the world to become circular in common (Gibson-Graham et al., 2016;
23 Nightingale, 2019). We argue that without careful attention to issues of power, politics and justice
24 in conceptualizations of ownership, transitions toward the circular economy have the potential to
25 exacerbate inequalities and dismantle existing practices of circularity. By "staying with the
26 trouble" (Haraway, 2016) and remaining attentive to issues of property and the value of the circular
27 practices that already exist and collective attempts to create and protect commons, we might be
28 able to improve CE policy such that circularity can enhance human development and well-being.
29

30 2. DATA AND METHODS

31 This paper draws on a multiple case study methodology (Stake, 1995) using three distinct, yet
32 interrelated qualitative case studies to explore how circular economy programs and policies might
33 shift contemporary property relations— and to ground theory as we think about economic
34 alternatives. Case studies explore "bounded system[s] [...]" through detailed, in-depth data
35 collection involving multiple sources of information" (Creswell, 2007:73). Here, our cases are
36 bounded conceptually by facets of the circular economy - that is, we use practices imagined as
37 critical to circularity. These cases are not meant to serve as comparisons - instead, our multiple
38 case study methodology allows for "different perspectives on the issue" (Creswell 2007:74) and is
39 appropriate "to expand...theories and not to extrapolate probabilities" (Yin, 2014):21).
40 Triangulation between multiple sources of information is a critical component of case study
41 research, and allows for researchers to corroborate data (Yin 2014). Each of our cases rely on
42 existing academic literature from around the world to root our analysis in historical context. We
43 complement our narrative literature review (Sovacool et al., 2018) with original methods including
44 public discourse analysis, focus groups, and interviews.
45

46 **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

1

2 *Methods: Public Discourse Analysis*

3 In places like the United States, where discussions of circularity are still nascent, the public
 4 discourse around circular economies offers a unique opportunity to view sites of contestation and
 5 tension. Since practices like extended producer responsibility for packaging, product service
 6 systems and online fashion resale platforms are still emerging, they cannot yet be studied *in situ*
 7 in the US, but discussions about these practices are very much present in public discourse. As
 8 such, we utilized public discourse analysis (Pareschi and Lusiani, 2020) to help us understand
 9 emergent debates and claims-making related to circular economies in our case studies. This
 10 analysis of public discourse in the United States includes news media (Leitch and Bohensky,
 11 2014), as well as public testimony for legislation, and self-produced content (op-eds; blogs)
 12 designed for a public audience.

13

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

28

29 *Methods: Focus Groups*

30 Our cases also draw on a series of virtual focus groups conducted over a six month period (10
 31 groups, 58 individual participants) with US-based circular economy professionals, convened to
 32 explore opportunities and barriers associated with circular economy transitions (IRB #20200902,
 33 NSF Award #1934426). We developed a database of 204 US-based circular economy stakeholders
 34 identified based on their engagement in US circular economy discourse, including membership in
 35 professional networks, authorship of gray literature (business, organizational, and policy
 36 documents), as well as searches for sustainability-related titles at organizations making public
 37 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.

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

10
11 The market-based model has significant international precedent in the EU and British Columbia.
12 The West Coast Refuse & Recycling Coalition (WCRRC) released a report on the British
13 Columbia model noting that, “Advocates of EPR programs for packaging and paper products in
14 the U.S. point to [British Columbia] as the model for EPR in this country” (Miller, 2019:4) in part
15 because the model has significant support from the consumer goods, beverage, and packaging
16 industries.

17
18 Our focus groups and public comments on EPR legislation makes it clear that the producers of
19 packaging overwhelmingly favor the market-centric model as a means to control the material stock
20 and residual value of discards. Table 2 includes some exemplary quotes from public testimony,
21 illustrating opposition to state-centric and support for market-centric models.

22
23 **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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1 The theme most relevant to our analysis in this paper is the desire for the industry to take
 2 managerial control over the recovered materials which would allow them to control both the
 3 processes utilized for recycling and to benefit from any residual value. Their language often
 4 implies that existing infrastructure has failed and that the scaling up of resource recovery will
 5 require investments in new technologies. Of particular interest is the ability for industry supported
 6 producer responsibility organizations (PROs) to include controversial “advanced recycling
 7 systems” such as gasification, incineration, and chemical recycling in the definition of recycling.
 8

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

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

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

31
 32 **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>

1 Many themes that run through these public testimonies, but central to our argument here is who
 2 should have control over the resources themselves and who has the opportunity to benefit from
 3 their recovery. Our research team gained additional insight into these debate through our
 4 interactions with several organizations skeptical of EPR. Not only do these organizations write
 5 frequent editorials about EPR for venues like *Waste Dive* and *Resource Recycling* but their
 6 representatives also participated in our focus groups. Speaking about EPR one skeptic said, “*I
 7 don't support EPR because the companies that get this stuff back through EPR, they crush it, they
 8 remove it from the U.S. market and it is never usable again ... Great stuff, I hate EPR*” (FG7 May
 9 17, 2021).

10
 11 While not opposed to EPR in theory, the Institute for Local Self-Reliance has been warning the
 12 recycling industry for decades about the potential for corporate-controlled EPR to exclude local
 13 businesses and entrepreneurs who have made their living by salvaging the residual value of
 14 discards – reflecting the scholarly literature which suggests that CE transitions can have
 15 unintended consequences for people who rely on waste for their livelihoods (Schröeder et al., 2019).
 16 In their analysis of British Columbia’s proposed EPR legislation in 2012 they wrote,

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

24
 25 Another organization, Urban Ore, warned recyclers directly in a 2012 blog post which read:
 26 *Gird your loins, recyclers, if you want to keep control of your industry or even the resources
 27 you personally harvest. Or get ready to say “uncle,” and with a smile, too, if you want to
 28 stay in business* (Entropy 2012:1).

29
 30 These debates about control over recyclables in the US and Canada echo earlier disputes about the
 31 ownership and value of waste from around the world. The waste studies literature abounds with
 32 examples of informal waste workers —pickers, haulers, middlemen, repair people, resellers,
 33 logistics providers— who enact a critical piece of the conceptual circular economy in the absences
 34 of state or private investments or due to failures of municipal waste services. Waste pickers are
 35 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).*

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).

12 13 **3.3 CASE STUDY III: Resale Markets and Intellectual Property**

14 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, ecommerce 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.

24 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 ecommerce platforms has muddled property
33 rights and relationships with regards to used goods. The scope and speed of ecommerce 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.

36 37 The largest ecommerce 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.

50

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.

50

51

1 **4. DISCUSSION: Rethorizing Property for Creating a Circular Society in Common**

2
3 As we hope these three case studies make clear, the process of waste revalorization for a more circular
4 economy is a highly political process that has motivated more actors to collect and capture waste (Ravasio
5 and Moreau, 2017). In that process, more powerful actors are able to capture value through property
6 contests. Schindler and Demaria (2020) outline how these conflicts reconfigure socio-metabolic systems
7 and all their attendant flows of energy, emissions, labor and materials —all too often resulting in the
8 dispossession of those who are exposed to waste and labor to extract its value. They write, “put simply,
9 powerful actors must typically impose new institutions (e.g. waste ownership) and/or introduce waste
10 management technology (e.g. incinerators) which reworks material flows (2020:54). The environmental
11 justice atlas lists more than 200 waste related conflicts around the world. Co-founder Martinez-Alier has
12 argued that circularity is not likely and resource conflicts will certainly continue in an entropic system that
13 produces pollution and extracts resources from commodity frontiers (Martinez-Alier, 2021).

14
15 Several scholars critical of the circular economy concept and its potential to exacerbate social and economic
16 inequalities have been inspired by the work of Jason Moore (2015) who has written persuasively about the
17 end of Cheap Nature—which he imagines will constitute a final crisis of capitalism. Moore understands
18 capital as a continuous process of expansion, constantly seeking new commodity frontiers or new forms of
19 Cheap Nature to, as he says, “extend the domain of appropriation faster than the zone of exploitation”
20 (Moore 2015: 217).

21
22 Marxist inspired theorists have long helped to illustrate the various means by which value can be
23 appropriated in capitalist systems. Beginning with Marx’s outline of how the capitalist class extracts value
24 by appropriating the surplus labor of workers (the unpaid labor expended beyond the sale price of the good)
25 and then utilizes that capital to enclose and legally capture common property through primitive
26 accumulation (Marx, 1992)—scholars have outlined a wide range of mechanism that seem potentially
27 relevant to the circular economy case studies presented in this paper. In *The Accumulation of Capital*, Rosa
28 Luxemburg (Luxemburg, 2003) posited that the expansion of capital would depend on the ability of the
29 system to expropriate resources, not just the surplus labor of domestic workers reinvested to expand
30 production, but also through the creation of new frontiers of exploitation in the developing world.
31 Luxemburg’s conceptualization of accumulation thus hinged on the ability of capitalist systems to set up
32 parasitic relationships between capitalist and non-capitalist spheres, extracting resources and creating
33 relations of dependency, often rationalized with racist and colonial logics. Dependency and World Systems
34 theories further developed our understanding of the mechanisms of appropriation, dispossession and
35 accumulation (Frank 1966; Wallerstein 1974). More recently Harvey’s concept of accumulation by
36 dispossession (2006) and De Angelis’ work on “the new enclosures (2004) has enjoyed considerable
37 attention, highlighting the dual character of capitalism that at once exploits by alienating people from
38 productive resources beyond their own labor at the same time that it expropriates by producing a moral
39 order of differentiation based on racialized, classed and gendered notions of legitimate and illegitimate
40 resource access and utilization (Wang, 2018).

41
42 Schindler and Demaria argue that without a new commodity frontier to exploit—which might fuel the next
43 expansionary phase of capitalism—attention has turned toward making existing systems more efficient by
44 capturing lost value. We have suggested that we may indeed be moving increasingly toward a time when
45 accumulation is tied not only to the appropriation of surplus labor, the exportation of surplus production or
46 the accumulation of nature, but increasingly the very detritus of a failing system (Isenhour and Berry,
47 2021). Unfortunately, as our case studies illustrate, this new focus on improving the efficiency of the
48 system is often at the expense of people who have long been practicing circularity as discards are
49 increasingly claimed as corporate property, essentially excluding informal workers—resellers, repairers,
50 cleaners, waste pickers—whose livelihoods often depend on this work and whose labor creates significant
51 local social, economic and ecological value (Anantharaman, 2017; Berry, 2022; Millar, 2018).

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

21
22 Anna Tsing’s concept of salvage accumulation is useful, recognizing not only the tendencies of capital to
23 commodify, appropriate and alienate, but also to understand how the process of capitalization may also
24 inspire non-capitalist spaces when it creates the “capitalist other of value” - places, spaces and people seen
25 as wasted (2015). But these sites of ruination are also sites of value generation as our cases make clear.
26 The question is, can they, in the movement toward a more circular economic system be kept open to the
27 commons, to those who saw value long before discussions about materials efficiency and circular economy?
28 JK Gibson-Graham’s sustained interventions encourage us to not only focus on the hegemony of capital,
29 but to valorize the affirmative, experimental, and enabling practices that abound in communities around the
30 world.
31

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).
51

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

1 **WORKS CITED**
2

3 Alexander, C., Reno, J., 2012. *Economies of Recycling: The Global Transformation of*
4 *Materials, Values and Social Relations*. Zed Books, London, UNITED KINGDOM.

5 Alfredsson, E., Bengtsson, M., Brown, H.S., Isenhour, C., Lorek, S., Stevis, D., Vergragt, P.,
6 2018. Why achieving the Paris Agreement requires reduced overall consumption and
7 production. *Sustainability: Science, Practice and Policy* 14, 1–5.
8 <https://doi.org/10.1080/15487733.2018.1458815>

9 Anantharaman, M., 2017. Elite and ethical: The defensive distinctions of middle-class bicycling
10 in Bangalore, India. *Journal of Consumer Culture* 17, 864–886.
11 <https://doi.org/10.1177/1469540516634412>

12 Baca, J., 2021. Misguided bill kills jobs and sets America back. The Hill. URL
13 <https://thehill.com/blogs/congress-blog/energy-environment/557482-misguided-bill-kills-jobs-and-sets-america-back/> (accessed 6.28.22).

14 Bauwens, T., 2021. Are the circular economy and economic growth compatible? A case for post-growth circularity. *Resources, Conservation and Recycling* 175, 105852.
15 <https://doi.org/10.1016/j.resconrec.2021.105852>

16 Berry, B., 2022. Glut: Affective Labor and the Burden of Abundance in Secondhand Economies. *Anthropology of Work Review* 43, 26–37. <https://doi.org/10.1111/awr.12233>

17 Berry, B., Farber, B., Rios, F.C., Haedicke, M.A., Chakraborty, S., Lowden, S.S., Bilec, M.M.,
18 Isenhour, C., 2021. Just by design: exploring justice as a multidimensional concept in US
19 circular economy discourse. *Local Environment* 0, 1–17.
20 <https://doi.org/10.1080/13549839.2021.1994535>

21 Bocken, N.M.P., de Pauw, I., Bakker, C., van der Grinten, B., 2016. Product design and business
22 model strategies for a circular economy. *Journal of Industrial and Production Engineering*
23 33, 308–320. <https://doi.org/10.1080/21681015.2016.1172124>

24 Bradley, K., Persson, O., 2022. Community repair in the circular economy – fixing more than
25 stuff. *Local Environment* 0, 1–17. <https://doi.org/10.1080/13549839.2022.2041580>

26 Carenzo, S., Juarez, P., Becerra, L., 2022. Is there room for a circular economy “from below”?
27 Reflections on privatisation and commoning of circular waste loops in Argentina. *Local
28 Environment* 0, 1–17. <https://doi.org/10.1080/13549839.2022.2048258>

29 Chen, T., 2020. A Poshmark Reseller Somehow Got Her Hands On A Major Fashion
30 Influencer’s Unreleased Clothing. Drama Ensued. [WWW Document]. BuzzFeed News.
31 URL <https://www.buzzfeednews.com/article/tanyachen/dramatic-saga-between-fashion-influencer-weworewhat-and> (accessed 2.17.22).

32 Coleman, E.G., 2010. Ethnographic Approaches to Digital Media. *Annual Review of
33 Anthropology* 39, 487–505.

34 Coons, C., Tillis, T., 2021. SHOP SAFE Act of 2021.

35 Creswell, J.W., 2007. Qualitative inquiry & research design: choosing among five approaches,
36 2nd ed. ed. Sage Publications, Thousand Oaks.

37 Dauvergne, P., 2016. Environmentalism of the Rich. MIT Press, Cambridge, UNITED STATES.

38 De Angelis, M., 2004. Separating the Doing and the Deed: Capital and the Continuous Character
39 of Enclosures. *Historical Materialism* 12, 57–87.
40 <https://doi.org/10.1163/1569206041551609>

41 Dias, S.M., 2016. Waste pickers and cities. *Environment and Urbanization* 28, 375–390.
42 <https://doi.org/10.1177/0956247816657302>

1 Dunham, J., 2021. The Counterfeit Silk Road: Impact of Counterfeit Consumer Products
2 Smuggled into the United States. Buy Safe America Coalition.

3 eBay, 2022. Verified Rights Owner (VeRO) policy [WWW Document]. eBay. URL
4 <https://www.ebay.com/help/policies/listing-policies/selling-policies/intellectual-property-vero-program?id=4349> (accessed 2.23.22).

5 Ellen Macarthur Foundation, 2021. Extended Producer Responsibility: A necessary part of the
6 solution to packaging waste and pollution (Position Paper). Ellen MacArthur Foundation.

7 Frank, A.G., 1966. The Development of Underdevelopment. 1 17–31.
8 https://doi.org/10.14452/MR-018-04-1966-08_3

9 Friant, M.C., Vermeulen, W.J.V., Salomone, R., 2020. A typology of circular economy
10 discourses: Navigating the diverse visions of a contested paradigm. Resources,
11 Conservation and Recycling 161, 2–19.

12 Geissdoerfer, M., Savaget, P., Bocken, N.M.P., Hultink, E.J., 2017. The Circular Economy – A
13 new sustainability paradigm? Journal of Cleaner Production 143, 757–768.
14 <https://doi.org/10.1016/j.jclepro.2016.12.048>

15 Genovese, A., Pansera, M., 2021. The Circular Economy at a Crossroads: Technocratic Eco-
16 Modernism or Convivial Technology for Social Revolution? Capitalism Nature Socialism
17 32, 95–113. <https://doi.org/10.1080/10455752.2020.1763414>

18 Gibson-Graham, J., Cameron, J., Healy, S., 2016. Commoning as a postcapitalist politics, in:
19 Releasing the Commons: Rethinking the Futures of the Commons, Amin A and Howell P
20 (Eds). Routledge, London, pp. 192–212.

21 Gidwani, V., Reddy, R.N., 2011. The Afterlives of “Waste”: Notes from India for a Minor
22 History of Capitalist Surplus. Antipode 43, 1625–1658. <https://doi.org/10.1111/j.1467-8330.2011.00902.x>

23 Giles, D.B., 2021. A Mass Conspiracy to Feed People: Food Not Bombs and the World-Class
24 Waste of Global Cities. Duke University Press Books, Durham.

25 Grant, A., Ganin, C., Asare-Konadu, A., 2022. The Resale Market Boom—What Sellers and
26 Brands Need to Know. Bloomberg Law.

27 Graziano, V., Trogal, K., 2019. Repair matters. Ephemera 19, 203–227.

28 Gutberlet, J., 2016. Regenerating Cities With Community-based Inclusive Waste Management
29 Practices. WIT Transactions on Ecology and the Environment 204, 57–63.
30 <http://dx.doi.org.wv-0-ursus-proxy02.ursus.maine.edu/10.2495/SC160061>

31 Gutberlet, J., Bramryd, T., Johansson, M., 2020. Expansion of the Waste-Based Commodity
32 Frontier: Insights from Sweden and Brazil. Sustainability 12, 2628.
33 <https://doi.org/10.3390/su12072628>

34 Haraway, D.J., 2016. Staying with the Trouble: Making Kin in the Chthulucene, Illustrated
35 edition. ed. Duke University Press Books, Durham.

36 Harvey, D., 2006. Spaces of Global Capitalism: A Theory of Uneven Geographical
37 Development, 1 edition. ed. Verso, London ; New York, NY.

38 Herrmann, G.M., 1997. Gift or commodity: What changes hands in the US garage sale?
39 American Ethnologist 24, 910–930.

40 Hickel, J., Kallis, G., 2020. Is Green Growth Possible? New Political Economy 25, 469–486.
41 <https://doi.org/10.1080/13563467.2019.1598964>

42 Hobson, K., 2020. The limits of the loops: critical environmental politics and the Circular
43 Economy. Environmental Politics 0, 1–19.
44 <https://doi.org/10.1080/09644016.2020.1816052>

1 Hobson, K., 2019. 'Small stories of closing loops': social circularity and the everyday circular
2 economy. *Climatic change* 1–18. <https://doi.org/10.1007/s10584-019-02480-z>

3 Hobson, K., Lynch, N., 2016. Diversifying and de-growing the circular economy: Radical social
4 transformation in a resource-scarce world. *Futures : the journal of policy, planning and*
5 *futures studies* 82, 15–25. <https://doi.org/10.1016/j.futures.2016.05.012>

6 Isenhour, C., 2016. Unearthing human progress? Ecomodernism and contrasting definitions of
7 technological progress in the Anthropocene. *Economic Anthropology* 3, 315–328.
8 <https://doi.org/10.1002/sea2.12063>

9 Isenhour, C., Berry, B., 2022. Resourceful ME:Exploring Multiple Forms of Value in Maine's
10 Reuse Sector. Senator George J Mitchell Center for Sustainability Solutions, Orono,
11 Maine.

12 Isenhour, C., Berry, B., 2021. "Still good life": On the value of reuse and distributive labor in
13 "depleted" rural Maine. *Economic Anthropology* 7, 293–308.

14 Jackson, T., 2009. *Prosperity with Growth*. Routledge, London.

15 Kaza, S., Yao, L.C., Bhada-Tata, P., Van Woerden, F., 2018. *What a Waste 2.0: A Global*
16 *Snapshot of Solid Waste Management to 2050*. World Bank, Washington, DC.
17 <https://doi.org/10.1596/978-1-4648-1329-0>

18 Kirchherr, J., Reike, D., Hekkert, M., 2017. Conceptualizing the circular economy: An analysis
19 of 114 definitions. *Resources, Conservation and Recycling* 127, 221–232.

20 Kumar, U.S., 2021. Second to none: fashion resalers bulk up to capitalize on booming sales.
21 Reuters.

22 Lane, R., 2011. The Waste Commons in an Emerging Resource Recovery Waste Regime:
23 Contesting Property and Value in Melbourne's Hard Rubbish Collections. *Geographical*
24 *Research* 49, 395–407. <https://doi.org/10.1111/j.1745-5871.2011.00704.x>

25 Leitch, A.M., Bohensky, E.L., 2014. Return to 'a new normal': Discourses of resilience to
26 natural disasters in Australian newspapers 2006–2010. *Global Environmental Change* 26,
27 14–26. <https://doi.org/10.1016/j.gloenvcha.2014.03.006>

28 Lewis, T., Rauturier, F., 2019. Gleaning around the globe: Reframing urban thrift via practices
29 and economies of hard rubbish reuse. *Journal of Consumer Culture* 19, 493–512.
30 <https://doi.org/10.1177/1469540519872072>

31 Liebesman, Y.J., Wilson, B., 2012. The Mark of a Resold Good. *George Mason Law Review* 20,
32 157–205.

33 Luxemburg, R., 2003. *The Accumulation of Capital*, 1st edition. ed. Routledge, London ; New
34 York.

35 Martinez-Alier, J., 2021. Circularity, entropy, ecological conflicts and LFFU. *Local Environment*
36 0, 1–26. <https://doi.org/10.1080/13549839.2021.1983795>

37 Marx, K., 1992. *Capital: Volume One – Toward a Critique of Political Economy*. Penguin
38 Classics.

39 Mathai, M.V., Isenhour, C., Stevis, D., Vergragt, P., Bengtsson, M., Lorek, S., Mortensen, L.F.,
40 Coscieme, L., Scott, D., Waheed, A., Alfredsson, E., 2020. The Political Economy of
41 (Un)Sustainable Production and Consumption: A Multidisciplinary Synthesis for
42 Research and Action. *Resources, Conservation and Recycling* 167, 105265.
43 <https://doi.org/10.1016/j.resconrec.2020.105265>

44 Medina, M., 2007. *The World's Scavengers: Salvaging for Sustainable Consumption and*
45 *Production*. AltaMira Press, Lanham.

1 Miles, M.B., Huberman, A.M., Saldaña, J., 2013. Qualitative Data Analysis: A Methods
2 Sourcebook, 3 edition. ed. SAGE Publications, Inc, Thousand Oaks, California.

3 Millar, K.M., 2018. Reclaiming the Discarded: Life and Labor on Rio's Garbage Dump. Duke
4 University Press Books, Durham ; London.

5 Miller, C., 2019. Recycle British Columbia's Extended Producer Responsibility for Packaging
6 and Paper: An Assessment of Its Impact. West Coast Refuse and Recycling Coalition.

7 Moore, J.W., 2015. Capitalism in the Web of Life: Ecology and the Accumulation of Capital.
8 Verso, New York.

9 Müller, J., 2021. 'Urban Mining' in Bolivia: Global Value Chains of Local Electronic 'Waste.'
10 Etnofoor 33, 41–56.

11 Nightingale, A., 2019. Commoning for inclusion? commons, exclusion, property and socio-
12 natural becomings. International Journal of the Commons 13, 16–35.
13 <https://doi.org/10.18352/ijc.927>

14 Nir, S.M., 2016. New York City Fights Scavengers Over a Treasure: Trash. The New York
15 Times.

16 Niskanen, J., McLaren, D., Anshelm, J., 2021. Repair for a Broken Economy: Lessons for
17 Circular Economy from an International Interview Study of Repairers. Sustainability 13,
18 2316. <http://dx.doi.org.wv-o-ursus-proxy02.ursus.maine.edu/10.3390/su13042316>

19 Padilla-Rivera, A., Russo-Garrido, S., Merveille, N., 2020. Addressing the Social Aspects of a
20 Circular Economy: A Systematic Literature Review. Sustainability 12, 1–17.

21 Paoli, A.D., D'Auria, V., 2021. Digital Ethnography: A Systematic Literature Review. Italian
22 Sociological Review 11, 243–267.

23 Pareschi, L., Lusiani, M., 2020. What editors talk about when they talk about editors? A public
24 discourse analysis of market and aesthetic logics. Poetics 81, 101444.
25 <https://doi.org/10.1016/j.poetic.2020.101444>

26 Pellow, D.N., 2004. Garbage Wars: The Struggle for Environmental Justice in Chicago. The MIT
27 Press, Cambridge, MA, USA.

28 Poshmark, 2022. Copyright [WWW Document]. Poshmark. URL
29 <https://poshmark.com/copyright> (accessed 2.23.22).

30 Ravasio, P., Moreau, P., n.d. Extended Producer Responsibility: Lessons from the Electronics
31 industry. Shirahime. URL <https://shirahime.ch/2017/08/extended-producer-responsibility-lessons-from-the-electronics-industry/> (accessed 6.27.22).

33 Resnick, E., 2021. The Limits of Resilience: Managing Waste in the Racialized Anthropocene.
34 American anthropologist 123, 222–236. <https://doi.org/10.1111/aman.13542>

35 Roshitsh, K., 2021. The Resale Market: Who's Playing, Who's Leading, Who's Emerging.
36 WWD. URL <https://wwd.com/sustainability/business/ebay-etsy-mercari-thredup-therealreal-clothing-resale-players-market-1234894315/> (accessed 2.23.22).

38 Sato, M., 2021. Takedown notices are threatening online thrift shops — just as business is
39 exploding [WWW Document]. The Verge. URL
40 <https://www.theverge.com/2021/12/13/22826114/takedown-notices-online-thrift-shops-copyright-trademark> (accessed 2.16.22).

42 Schindler, S., n.d. Solid Waste Management. Discard Studies Compendium. URL
43 <https://discardstudies.com/discard-studies-compendium/> (accessed 6.27.22).

44 Schindler, S., Demaria, F., 2020. "Garbage is Gold": Waste-based Commodity Frontiers, Modes
45 of Valorization and Ecological Distribution Conflicts. Capitalism Nature Socialism 31,
46 52–59. <https://doi.org/10.1080/10455752.2019.1694553>

1 Schröeder, P., Anggraeni, K., Weber, U., 2019. The Relevance of Circular Economy Practices to
2 the Sustainable Development Goals. *Journal of Industrial Ecology* 23, 77–95.
3 <https://doi.org/10.1111/jiec.12732>

4 Schroeder, P., Dewick, P., Kusi-Sarpong, S., Hofstetter, J.S., 2018. Circular economy and power
5 relations in global value chains: Tensions and trade-offs for lower income countries.
6 *Resources, Conservation and Recycling* 136, 77–78.
7 <https://doi.org/10.1016/j.resconrec.2018.04.003>

8 Seddon, J., West, D., 2021. President Biden's right to repair order needs strengthening to aid
9 consumers. *Brookings*. URL
10 <https://www.brookings.edu/blog/techtank/2021/07/14/president-bidens-right-to-repair-order-needs-strengthening-to-aid-consumers/> (accessed 7.5.22).

12 Seldman, N., 2018. EPR: The good, the bad and the ugly. *Waste Dive*.

13 Siegal, B., 2019. From the Flea Market to the Online Marketplace: How Brand Owners are
14 Fighting to Keep Infringers at Bay. *IPWatcdog*. URL
15 <https://www.ipwatchdog.com/2019/11/21/flea-market-online-marketplace-brand-owners-fighting-keep-infringers-bay/id=116278/> (accessed 2.23.22).

17 Souto, N., Seldman, N., Knapp, D., 2012. Extended Producer Responsibility In British Columbia
18 – A Work at Risk. *Institute for Local Self-Reliance*.

19 Sovacool, B.K., Axsen, J., Sorrell, S., 2018. Promoting novelty, rigor, and style in energy social
20 science: Towards codes of practice for appropriate methods and research design. *Energy
21 Research & Social Science, Special Issue on the Problems of Methods in Climate and
22 Energy Research* 45, 12–42. <https://doi.org/10.1016/j.erss.2018.07.007>

23 Srniecek, N., 2016. Platform Capitalism, 1st edition. ed. Polity, Cambridge, UK ; Malden, MA.

24 Stake, R.E., 1995. *The Art of Case Study Research*. Sage Publications, Thousand Oaks.

25 Staub, C., 2020. COVID-19 cases disrupt more recycling programs - Resource Recycling.
26 Resource Recycling News. URL <https://resource-recycling.com/recycling/2020/06/30/covid-19-cases-disrupt-more-recycling-programs/>
27 (accessed 10.18.21).

29 SWANA, 2019. Resetting Curbside Recycling Programs in the Wake of China: Executive
30 Summary. *SWANA Applied Research Foundation*.

31 ThredUp, 2021. 2021 Resale Report. *ThredUp*.

32 Tojo, N., 2004. Extended Producer Responsibility as a Driver for Design Change – Utopia or
33 Reality? (IIIEE Dissertations). Lund University, Lund, Sweden.

34 Tran, T., Goto, H., Matsuda, T., 2021. The Impact of China's Tightening Environmental
35 Regulations on International Waste Trade and Logistics. *Sustainability* (Basel,
36 Switzerland) 13, 987. <https://doi.org/10.3390/su13020987>

37 Tsing, A.L., 2015. *The Mushroom at the End of the World: On the Possibility of Life in
38 Capitalist Ruins*. Princeton University Press, Princeton.

39 Valenzuela, F., Böhm, S., 2017. Against wasted politics: A critique of the circular economy.
40 *ephemara* 17, 23–60.

41 Velis, C., 2017. Waste pickers in Global South: Informal recycling sector in a circular economy
42 era. *Waste Manag Res* 35, 329–331. <https://doi.org/10.1177/0734242X17702024>

43 Vellis, C., Vrancken, K., 2015. Which material ownership and responsibility in a circular
44 economy? *Waste Management & Research* 33, 773–774.
45 <https://doi.org/10.1177/0734242X15599305>

1 Wallerstein, I.M., 1974. The modern world-system: capitalist agriculture and the origins of the
2 European world-economy in the sixteenth century. Academic Press, New York.

3 Wang, J., 2018. Carceral Capitalism. Semiotext, South Pasadena, CA.

4 Yin, R.K., 2014. Case study research: design and methods, Fifth edition. ed. SAGE, Los
5 Angeles.

6 Yrjölä, M., Hokkanen, H., Saarijärvi, H., 2021. A typology of second-hand business models.
7 Journal of Marketing Management 37, 761–791.
8 <https://doi.org/10.1080/0267257X.2021.1880465>

9 Zapata Campos, M.J., Zapata, P., Ordoñez, I., 2020. Urban commoning practices in the repair
10 movement: Frontstaging the backstage. Environ Plan A 52, 1150–1170.
11 <https://doi.org/10.1177/0308518X19896800>

12

13