Journal of Cleaner Production 279 (2021) 123747

Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro

Developing novel property concepts in private law to foster the circular economy

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ARTICLE INFO

Article history:
Received 28 November 2019
Received in revised form
5 June 2020
Accepted 12 August 2020
Available online 15 August 2020

Handling Editor. Yutao Wang

Keywords:
Circular economy
Innovation
Private law
Property
Intellectual property rights
Utilitarian and social planning theories

ABSTRACT

This paper highlights the shortcomings of the mainstream utility economic approach to the private law pillar of 'property' in fostering socially desirable developments, such as sustainability, important in the context of the circular economy (CE). In this exercise, we take the examples of two prominent private law regimes, namely intellectual property and property laws. We shed light over specific issues related *inter alia* to acts of repairing, reusing and leasing, where in particular these selected private law fields are currently failing to provide the incentives needed for directing innovations and businesses towards more sustainable types of model. We argue that this mainstream utility approach to property has become untenable in a world where the impact of both tangible and intellectual property law frameworks on ecological integrity should actually be prioritized. As we then show, legal practices that reflect more social planning types of theory might better facilitate a smoother and swifter transition towards the CE. This switch would also better align private law regimes with some of the noble goals already included in public areas of law, that way putting the two frameworks more in harmony towards achieving a European sustainable CE.

1. Introduction

The transition towards a circular economy (CE) is both an environmental necessity and an economic opportunity. On the one hand, it is a necessity because the global population as a whole is growing particularly fast (Dobbs et al., 2011), which puts huge pressure on the exploitation of natural resources (Steffen et al., 2015). On the other, the CE is an opportunity because it carries huge potential for supporting new kinds of business model. For instance, in Europe it has been estimated that the CE could create an annual total benefit of €1.8 trillion by 2030, or €0.9 trillion more than in the current – essentially linear – development path. Even though the potential business opportunities stemming from a circular type of economy are remarkable, as pointed out in the report 'Growth Within: a circular economy vision for a competitive Europe' (Ellen MacArthur Foundation, 2015), for this to occur there might be a need for significant structural changes not only of modern production and consumption systems, but also of the regulatory framework that governs them and their innovation ecosystems.

No universal definition of circular economy exists, and the concept has many origins which do not constitute a fully harmonic whole (Ghisellini et al., 2016; Kirchherr et al., 2017; Blomsma and Brennan, 2017; Korhonen et al., 2018a, 2018b). Notwithstanding this variety, however, the common denominator of all definitions is that they refer to fundamental changes in production and consumption systems. Thus, while we acknowledge the contested nature of any definition of the CE, a workable point of reference for this paper is the simple and brief definition occasionally emerging in scientific literature (e.g. Blomsma and Brennan, 2017; Korhonen et al., 2018a), according to which a circular economy is a "general term covering all activities that reduce, reuse, and recycle materials in production, distribution, and consumption processes".

To advance and facilitate the transition towards the CE, national European governments and the European Union (EU) have adopted a series of policy measures, including several legislative actions. Due to the nature of the EU machine, it is not surprising that most of these initiatives have been using legal techniques common in the domain of public law, which governs relationships between private parties and the government. While the distinction between public and private law is blurred, it looks that legal techniques, which aim to regulate the relationships between private parties have not been

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https://doi.org/10.1016/j.jclepro.2020.123747

much used to advance and facilitate this transition. Another issue is that even though environmental law generally regulates both kinds of relationships (i.e. state-individuals/organisations and individuals/organisations per se), the main emphasis is on the public law side. In this article, we use the distinction between private and public law to underline that traditional private law regimes may provide a sound basis to improve the law's capacity to foster the circular economy. For example, on the one hand, it is indicative that the core piece of legislation in this context, introduced in 2018 following the EU Action Plan for the CE (European Commission, 2015), was Directive 2018/851, a revision of the Waste Framework Directive (2008/98/EC). Similarly, the Member States have thus far mainly focused on public law types of policy. On the other hand, however, scholarly literature is increasingly pointing towards the fact that waste law provides insufficient means for promoting the flourishing of economic activities around the concept of the CE (Ghisellini et al., 2016; Backes, 2017; Milios, 2018). The European Commission brought a broader approach, namely 'life-cycle thinking', into policy discussion as far back as 2001 (European Commission, 2001). However, even this might be too narrow an approach. Indeed, in a market (or mixed) economy, transition to the CE calls for fundamental changes at multiple levels, in order to steer sustainability values into developing technological innovations and viable business models. In a market (or mixed) economy the State can create regulatory frameworks for companies and consumers but it has only limited possibilities to directly command what products and services should be produced and consumed. The State is highly unlikely to know the details of how complex production and consumption systems work and, thus, of how they should be changed, for instance in order to embed CE types of vision, while still keeping the market economy functioning. Without harnessing the creative forces of the market economy, new (more sustainable) ways of producing and consuming may never appear. Considering the key role that private law plays in fostering technological innovation and creativity – as well as in regulating business – there is an urgent need to assess private law's ability to fulfil the needs of the CE.

Fostering the CE (or, more generally, fostering environmental sustainability) in private law requires taking a holistic, rather than a sectoral, approach. While environmental, economic and social aspects of sustainability are interlinked (Goodland and Daly, 1996), we hereby understand environmental sustainability as a principle requiring maintaining natural capital (Goodland, 1995). Achieving environmental sustainability does not necessary exclude economic growth. Green growth uses natural capital in sustainable manners, i.e. following the principle of environmental sustainability (World Bank, 2012). Sustainability values should be embedded into all the fundamental pillars of private law, rather than merely included sectorially into individual private law regimes. The key pillars of private law are seen as: the person, property, contract, tort liability and remedies (Micklitz, 2015). This paper focuses on embedding sustainability into the pillar of property only. In this exercise, we take the examples of two prominent private law regimes, namely intellectual property (IP, IPR) – with special focus on patent law – and property laws. Undoubtedly, IP and property law tools might incentivize new, more sustainable, types of innovation, as well as foster development of relevant business models, thus facilitating the industry's advance towards a more CE. Yet these regulatory frameworks, as they currently stand, present several shortcomings in need to be addressed. Here, we argue that the problem goes beyond specific issues related to these two regimes alone. Instead, the problem is more fundamental, linked to how we currently conceive and understand the property pillar in prevailing private law systems (Taylor and Grinlinton and Taylor, 2011; Butler, 2018). Importantly: are the global challenges that humanity is facing today met appropriately by the mainstream traditional way of conceiving property in Western legal regimes?

The key theories that are currently used in Europe (as well as in most Western types of legal regime) to justify private property are based on some form of utilitarian property theory, where the emphasis has lain on rather straightforward economic efficiency (Fisher, 2001; Alexander and Peñalver, 2012). Environmental sustainability has usually been ignored, which in turn has probably led to a ripple effect. Both the legislation and the leading principles followed in many areas of private law – above all in IPR and property laws – often emphasize economic efficiency. Sustainability, including environmental sustainability, has not traditionally been a major objective in private law and, as a consequence, it is insufficiently reflected in existing theories and practices.

This paper highlights the shortcomings of the mainstream utility economic approach to property in fostering socially desirable developments, such as the environmentally sustainable developments that are so important in the context of the CE. In this respect, we shed light over specific issues related *inter alia* to acts of repairing, reusing and leasing, where especially the selected private law regimes – IPR and property laws – are currently failing to provide the incentives needed for directing innovations and businesses towards more sustainable types of model. Our analysis demonstrates how the mainstream utilitarian approach to property, as followed in e.g. the European IP and property right systems, largely bypasses societal values other than economic efficiency, such as for instance environmental sustainability. We argue that this perspective has become untenable in a world where the impact of both tangible and intellectual property law frameworks on ecological integrity should actually be prioritized. As we then show, legal practices that reflect more social-planning types of theory to property, i.e. a vision which views property as a good that can be used to build a just and attractive culture, could better facilitate a smoother and swifter transition towards the CE. This switch would also better align private law regimes with some of the goals already included in public areas of law, thus putting the two frameworks more in harmony towards achieving a European sustainable CE.

2. Current EU regulation

Repairability, refurbishability, reusability, as well as shareability (which also includes e.g. leasing) of products are important for the CE. As such, to promote the transition from a linear to a circular economy the law should promote such activities. In this context, the main piece of European legislation is the Waste Framework Directive (Directive, 2008/98/EC). This instrument focuses, as its name suggests, mainly on the final stages of the life-cycle of products, such as recovery, recycling, and disposal of waste. Already the original Directive from 2008 contained some reference to e.g. repair, although rather weakly. The revision of the Waste Directive (Directive, 2018/851/EU) has impressive goals as indicated in its preamble (point 29). Still, the legally binding provisions of this amendment are not deeply convincing. For example, the amendments to Article 9 on prevention of waste brought in a more systematic and detailed approach for gradual development of monitoring and assessment procedures concerning e.g re-use and repair of products. However, the Article only requires Member States to take measures *to encourage* re-use of products and setting up systems to promote repair and re-use activities. Moreover, the Directive contains no reference to shareability of products or collaborative consumption. Notably, Article 9 poses some limits to repairing and reusing activities in the case of pre-existing intellectual property rights (IPR, IP) by stressing that such acts (as well as availability of spare parts, instruction manuals, technical information, or other instruments, equipment or software enabling

repair and re-use of products) should be encouraged "without prejudice to intellectual property rights". On the other hand, there also exist more specific directives that set stricter requirements as part of the product liability system, such as the directive on waste electrical and electronic equipment (Directive, 2012/19/EU). Among other things, this directive allows Member States to require that bodies other than producers or third parties acting on behalf of producers should have – for purposes of preparing for re-use – access to waste electrical and electronic equipment (WEEE) deposited at collection facilities. This creates new business opportunities aiming to increase reuse of waste.

Re-manufacturing, refurbishing, repairing and re-using could significantly reduce the amount of new material needed in our economy, as a report by the International Resource Panel of the United Nations Environment Programme (Nasr et al., 2018) suggests. According to the report, as summarized in 'Key insights for policy makers' (2018), production and use of new materials could be reduced by 80–98 per cent by fostering remanufacturing, 82–99 per cent via comprehensive refurbishing, and 94–99 per cent by encouraging repair. Moreover, these practices could lead to a significant number of new jobs and markets. Indeed, seen from this perspective, product policy comes much closer to the heart of the CE than waste policy.

The key instruments of the current EU products policy are the Ecodesign Directive (Directive, 2009/125/EC), the Energy Labelling Regulation (Directive, 2017/1369), the Ecolabel Regulation (Directive 66/2010), the Green Public Procurement Directive (Directive, 2014/24/EU) and the Extended Producer Responsibility Articles 8 and 8a in the Waste Directive (as amended by Directive, 2018/851/EU). According to the new Circular Economy Action Plan, the Commission will introduce sustainable product policy legislative initiative in the future. The objective of this planned policy action is to broaden the range of products covered by the Ecodesign framework and make it deliver on circularity (European Commission, 2020). While the ambition level seems to be high, the content of the concrete proposals is still to be seen. The current Ecodesign Directive aims to ensure energy-efficiency of products which come to the market, through standardization. This Directive is implemented through product-specific regulations directly applicable in all EU countries. For instance, the new rules adopted in October 2019 for household appliances include requirements for repairability and recyclability for these types of product. This is an important step towards a more circular type of economy, where repairability is crucial. Still we must remember that these rules apply only to a very limited number of products (e.g. washing machines, electronic displays and light sources) whereas preparing similar kinds of requirements for all existing and forthcoming products in dynamic markets would require huge administrative resources.

The Energy Labelling Regulation aims to inform consumers about energy-efficiency. Currently, the Ecodesign Directive and the Energy Labelling Regulation apply only to energy-related products. However, recital 39 of the Ecodesign Directive states that the Commission should assess the appropriateness of extending its scope beyond energy-related products. This work is apparently on its way. In fact, the Commission, when preparing or revising implementing measures of this framework Ecodesign Directive, systematically explores resource efficiency aspects more broadly and also looks at durability, reparability and upgradability, recyclability as well as the content in recycled materials. The Commission also aims to promote modularity of components (European Commission, 2019a). These aspects of ecodesing are new and, although as yet they do not have any significant impact, they are likely to promote the CE in the future.

The EU Ecolabel Regulation is another information-based instrument, which is voluntary and aims to promote production of products with a reduced environmental impact throughout their whole life cycle. Ecolabel criteria have been established for 25 goods and service groups. Green Public Procurement, another voluntary instrument, guides public authorities towards procuring goods, services and works with a reduced environmental impact throughout their life cycle. Extended producer responsibility is a means to ensure that producers contribute financially to the costs of waste management.

It should be noted that consumer protection law may also be relevant for the CE. For instance, the Unfair Commercial Practices Directive (Directive, 2005/29/EC, UCPD) addressed the issue of faster obsolescence of products and also misleading and unfounded environmental claims. The Consumer Sales and Guarantees Directive (Directive, 1999/44/EC, CSGD) offers consumer protection in the case of faulty products. One simple and effective measure to promote product quality is to extend reversal of the burden of proof in consumer sales, a measure clearly beneficial when considering CE objectives (see also European Commission, 2019b; Directive, 2019/771/EU art. 11).

Notwithstanding all these highly welcome efforts, though, apart from the future Ecodesign Directive requirements none of these instruments aims directly to promote repairability, refurbishability, or reusability of products. Moreover, no EU legislation to date touches upon the issue of shareability (such as leasing). The Commission has produced a policy document outlining the general EU approach to the collaborative economy, but not from a CE point of view (European Commission, 2016). Recent policy documents with high profile, the EU Green Deal Communication (European Commission, 2019c) and the new Circular Economy Action Plan (European Commission, 2020), also contain references to repair, reuse, and new business models based on sharing and renting. Hence, the idea of promoting repairability, refurbishability, reusability and shareability of products has emerged in political vocabulary, but the law in force is still quite underdeveloped in these respects.

In this transition, directly regulating the relationship between key actors – such as private individuals and organisations operating in the market – might be central. Thus, areas of private law like IPR and property laws that clearly affect acts such as repair, reuse and share (e.g. leasing) of goods indeed become highly relevant to complement and add concreteness to public regulation. For this to happen, however, some changes need to occur in the way we conceive of property in e.g. IP and property law frameworks in order for these regimes to promote a CE type of vision.

3. Justifying property: is there a place for sustainability?

According to EU law, one of the key mandates of the Union is to pursue sustainable development. For instance, Article 3 (3) of the Treaty on European Union (TEU), dictates that the EU will work for the *sustainable development* of Europe, including a high level of protection and improvement of the quality of the environment. Indeed, this requirement must be integrated into the definition and implementation of Union policies and activities (Voigt, 2014), that is, it should be reflected in all fields of EU regulation. As to environmental protection in particular, under Article 11 of the Treaty on the Functioning of the European Union (TFEU), environmental protection requirements "must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development."

The EU does not have general competence to regulate private law, although it does have specific competences, largely connected to the needs of the single market (Mańko, 2015). Consequently, private law systems have to be studied country by country. As noted

in section 1 of this article, environmental sustainability has not traditionally been a major objective in private law. This is clearly reflected in the way the pillar of property is currently conceived. For instance, according to Fisher (2001), a prominent theorist in IP theory, intellectual property can be viewed through the following four political lenses (in order of prominence and influence), that actually derive from property law theories:

1. Utility theory (or utilitarianism), which attempts to maximize net social welfare.
2. Labour theory, which recognizes and rewards individuals for their work.
3. Personality theory, which acknowledges that creation is a form of self-expression and selfhood.
4. Social planning theory, which views property as a good that can be used to build a just and attractive culture.

For our purpose, theories 1 (utility) and 4 (social planning) are the most relevant. Utility theory, which has been dominant in justifying tangible property as well, is also the most popular theory in the IPR context. In respect to IPR, the theory means to assign to e.g. authors (in the domain of copyright) or inventors (in the domain of patents) a set of rights to exclude others from enjoying (e.g. from copying, making, using or sharing) the (intellectual) property (i.e. the artistic creation in the case of copyright or the technological invention in the case of patents) that they have developed. The scope of these exclusive rights should be 'sufficient' (i.e. broad and strong enough) to incentivize authors and inventors to actually develop and make available their creations and inventions. The idea is that without the IPR incentive authors and inventors would not invest in developing such creations and inventions, and ultimately, society as a whole would be less well off. Thus, even though IPR can be seen as relative monopolies (limited in time and scope), and might thus carry several transaction costs, if we look at IPR from a utilitarian or consequentialist perspective, the ultimate result triggered by the IP system (flourishing or artistic and technological innovations) is greater than the costs we need to bear (Weil, 2013). Indeed, this is all based on a highly delicate balance between a 'sufficient' level of (intellectual) property protection and access: how much protection is needed? From a law and economics perspective, the level of 'sufficiency' relates to the R&D costs needed in order to develop the innovation or creativity involved. For instance, while considering the optimal patent protection for a certain invention, there are several reasons to limit the scope of the patent right (i.e. the scope of the −intangible - property right) in terms of both length and breadth. On the one hand, based on economic growth theories, free usage of new innovations improves productivity in the economy. At the same time, however, with less protection, the incentive to invest in the necessary R&D diminishes, leading to a decreased level of growth. To find the right balance is not an easy task, also considering the inefficiencies that often accompany a monopoly and problems such as a large volume of litigation (Landes and Posner, 2003).

Social planning theory, in contrast, reflects the idea that property and intellectual property rights can (and, actually, should) foster development of a just and attractive culture. As Fisher (2001) clearly puts it: "[t]his approach is similar to utilitarianism in its teleological orientation, but dissimilar in its willingness to deploy substantive visions of the good, not reducible to the greatest good of the greatest number." Indeed, the main challenge here relates to how lawmakers who seek to harness social-planning types of theory can – through adjustments to the law – formulate a vision of a 'just and attractive' culture or society, as well as of what sort of society they, the legislator, should try to promote (Fisher, 2001).

European (and, generally, Western-style) property and IP systems heavily rely on utility-type theories, where a mainstream economic and incentive approach is the primary justification for the private property rights involved. This system promotes individual autonomy by decreasing information and transaction costs, as well as collective action problems (Fisher, 2001; Doremus, 2011). As Butler (2017) puts it, one of the key characteristics of this type of owner-centric approach is that each owner is viewed as a 'gatekeeper' holding rights that, when exercised, bind all others (including third parties) to the owner's decisions. This perspective might be especially problematic in terms of issues related to sustainability and the CE, where efficient use of resources should be prioritized over the economic expectations and interests of individual owners. Moreover, a system that places at the centre the interests of the property owner and has as its primary aim to provide incentives for individuals, inevitably leads to a framework where strong property rights prevail, while exceptions to those rights are kept to a minimum. With all this in mind, it could be argued that in order to foster developments and diffusion of technologies and businesses that better promote societal values – such as sustainability and the CE – there is a need for the legislator to shift towards practices that reflect a social-planning type of vision, while diminishing the role of the purely utilitarian approach to property. The evolution of fundamental rights and key principles of legal systems support this argument. While protection of property remains an important fundamental right worldwide, many national Constitutions – like that of Finland and the Charter of Fundamental Rights of the European Union – grant protection to the environment as well (Heiskanen, 2018).

At the moment, new ideas are being presented towards this direction. For example, Brettschneider has emphasized the importance of welfare while justifying the exclusion of others from private property as a regulatory solution (Brettschneider, 2012). On the other hand, the moral justification of private property can be found from a combination of individual freedom and the role of individuals in communities, namely as people having responsibilities and obligations towards others. For instance, starting from these building blocks it can be claimed that the moral foundation of private property lies in human flourishing (Alexander and Peñalver, 2012; Alexander, 2018; Akkermans, 2019/2020). These could all be ways to interpret the vision of a 'just society' while conceiving private property in accordance with more social-planning type theories. Indeed, these are issues that are highly politically dependent. Yet, if the assumption is, as we argue here, that fostering the CE (and environmental sustainability in general) through law is a mainstream priority for current Western society to be considered 'just' and 'attractive' (as conceived by a social planning types of theory to property justification), then a change in the way we justify and conceive of private property might very well be seen as a necessity.

4. Sustainability and private property

As previously mentioned, it has become increasingly evident that repairability, refurbishability, reusability and shareability (incl. leasing) of goods are collectively and individually crucial in order to achieve a CE. Here, we focus on acts of repair, reuse and leasing in the specific private law regimes of property and intellectual property laws. We use these key examples to show how the emphasis on conceiving of private property from the perspective of economic efficiency, focusing on utility and incentives for individual owners, has led to the development of legal practices that are actually creating obstacles to embracing CE ways of thinking. Ultimately, this analysis will enable us to shed light over novel practices that might help develop private property concepts in order to better reflect a more social-planning theory approach that fosters the CE.

4.1. Property law regime - challenges with leasing

In the context of the property law regime, the act of leasing provides us with a relevant example to show the shortcoming mentioned. To explain these issues we take the examples of product-service systems (PSS), business models that are often mentioned as interesting in the context of the CE (Tukker, 2015; Kühl et al., 2018; Ionașcu and Ionaș;cu, 2018). However, not all types of combination of tangible products and intangible services are of interest in this paper. Following the classification used by Tukker (2004), our main focus lies on *use-oriented services*. Besides use-oriented services, there are two other main categories of PSS: product-oriented services and result-oriented services. In use-oriented services, according to Tukker (2004), "the traditional product still plays a central role", and at the same time "[t]he product stays in ownership with the provider, and is made available in a different form, and sometimes shared by a number of users."

In our analysis, an important starting point is that the client does not become the owner of the goods. There are several subcategories of use-oriented services depending on the number of users and the nature of the co-use. If many users are allowed to enjoy a product at different times, the business model is called 'product renting' or 'product sharing', instead of product leasing (or product lease); in the case of simultaneous use of the product, the term is 'product pooling' (Tukker, 2004). For the purpose of our paper, it is sufficient to focus on product leasing only. For example, a single person in need of a lawn mower for a longer period of time makes a lease contract with a person owning such a lawn mower.

In the case of leasing, an important legal question arises from the juridical classification of the right to use the product. The right a lessee possesses may be considered a limited proprietary right, depending on the lessee's legal position. A property (or real) right that has been split off from a right of ownership is called a 'limited proprietary right' or 'limited property right', because the powers embedded in it are – compared to full ownership of the thing – restricted to certain rights to use the thing and/or to a fixed period of time. Like the concept of property, the concept of limited proprietary rights is not the same in all jurisdictions in the EU. As a starting point, a limited proprietary right can be understood the same way as in Book VIII in the Draft Common Frame of Reference (DCFR), a well-known academic project containing a series of model rules for many areas of private law. In general, a limited proprietary right is effective against everyone (von Bar and Clive, 2009). According to DCFR VIII.–1:204, many rights may be limited proprietary rights in the sense of Book VIII. For example, the rights to use a movable object (e.g the right of a lessee) are limited proprietary rights, if characterized or treated as such by other provisions of the DCFR or by national law.

Because of freedom of contract, the owner of a property usually has the power to create different kinds of object-related rights in favour of the other party. Utilitarian theories can be applied to these rights as well: whether we are discussing a right to use, such as leasing, or a security right, the effect against everyone else, and the status of a limited proprietary right, should be granted if this can be justified by the utility gained. In other words, justifications for limited property rights also follow a school of thought where environmental concerns are ignored.

Product leasing, as well as PSS in general, has a relevant connection with the CE because of the potential environmental benefits of this model. The same demand can be met with fewer products, and the link between profit and production volume is not the same as in the traditional linear model. Notably, PSS gives manufacturers incentives to create durable and long-lasting products with the intention of offering them via PSS. Overall, PSS could lead to a more sustainable and resource-efficient economy (Thompson et al., 2010; Tukker, 2015; Kühl et al., 2018), even though there are also some downsides such as the risk of using a leased product less carefully than a bought product, and unsustainable use of products (Tukker, 2015; Annarelli et al., 2016; Hüer et al., 2018).

While comparing the benefits and downsides of PSS, it may turn out in some cases that PSS is not so sustainable. Among other things, the emergence of new kind of demand must be taken into consideration, too. For example, a notable electric kick scooter rentals market has developed in many cities, and this has affected to the total amount of the electric kick scooters. To get a clear understanding of the significance of the PSS from the sustainability perspective, more experiences and research-based evidence is needed. However, for the purpose of the article at hand, it is enough to acknowledge that PSS could have certain potential environmental benefits. As such, PSS is widely considered as an interesting CE business model.

Even if a transition to use-oriented services or PSS in general would be recommendable, this is not always easy because of conservative attitudes at multiple levels. In a B2C context, both consumers and companies may have reasons to stay with the familiar ways of production and consumption. For example, consumers tend to prefer owning the objects they use, at least when the usage is for a relatively long period of time (Tukker, 2015; Gullstrand Edbring et al., 2016). Furthermore, legislation on PSS is under-developed in many jurisdictions. There might even exist some legal solutions that actually guide suppliers and clients towards embracing the traditional linear model-based types of products.

Considering specifically use-oriented services, regulation on leasing (or hire) transactions is inadequate in many jurisdictions, in comparison with regulation on sale. In Finland, for example, several regulations cover sale of goods, above all the Sale of Goods Act (355/1987) and the paragraphs in the Consumer Protection Act (38/1978). On the other hand, regulation on leasing is quite scarce. It is enough to say that certain provisions of the Commercial Code from as far back as 1734 (3/1734) are still to date valid law, notwithstanding their being largely outdated. The legislative environment is about the same in Sweden. As stated in the Swedish public report SOU 2017:26 on the sharing economy, due to lack of legislation on leasing, attention usually turns to contractual terms, especially in standard form contracts, and general principles of private law.

Following the freedom of contract principle, PSS is usually legitimate even in jurisdictions with under-developed regulation on leasing. On the other hand, lack of legal clarity can reduce interest towards investing in this type of business model. For example, consumers are probably entitled to a certain minimum protection in contractual relations with a supplier providing PSS. However, when this is not clearly stated in the law, consumers may be more reluctant to accept PSS.

Although several factors may influence consumer decisions, rational consumers would take into consideration the legal position of a lessee compared to that of an owner when making decisions between leasing and buying. For example, generally speaking, as an owner a consumer can transfer ownership to someone else. On the other hand, some differences are beneficial for consumers or clients in general. For example, if goods deteriorate or are destroyed, lost or diminished, the so-called 'risk for the goods' principle comes into play. As buyer, the consumer usually carries this risk, at least starting from a certain point in time. As to leasing an object, the lessee usually does not undergo a similar risk, at least not as a starting point (see also DCFR IV.B.-3:101, 3:104 and 5:104).

In the property law regime, the legal position of a lessee is often weaker or worse than the legal position of an owner. In particular, the right to use can be considered as a 'weak' right compared to ownership when so-called 'third-party effects' are studied. From a

historical point of view, this has traditionally been the starting point in several European countries: the right of the lessee has been classified as an obligatory right or a non-proprietary right that is not protected the same way as for example ownership, a right *in rem* (Forssell, 1976; Lilleholt et al., 2008).

In many jurisdictions, the weakness of the right to use has been largely justified by using some form of utilitarian theory as to the conception of property, without taking into consideration sustainability arguments. Generally speaking, right in rem status, and protection as a limited proprietary right, has not been deemed necessary or advisable from the point of view of economic efficiency. Even though arguments of an economic nature exist for protection of e.g. a usufructuary right, the importance of enabling a property owner to transfer ownership to another without burdens outweighs these benefits. Put simply, according to the traditional view in many jurisdictions, the most efficient use of resources in a market economy is achieved by keeping ownership in new hands as free as possible from the burdens of the previous owner (Forssell, 1976; Tepora, 1999; Tuomisto, 2004).

As a consequence of the 'inferior' value of a lessee's right, a lessee has to accept some legal risks related to not buying the goods. If, for example, the lessor transfers ownership to a new owner, the lessee may lose the right to use the object. There are many possible solutions to the legal problem that arises. According to Lilleholt et al. (2008), the two main models that have thus far been adopted to solve the conflict are: 1) the lessee's right is merely an obligatory right that does not affect the new owner at all, or 2) the lessee's right is protected, at least to some extent. The traditional solution, adopted in several jurisdictions, has been model 1), although some countries have also followed some form of model 2). Moreover, in some jurisdictions the applicable rules are not totally clear. For example, there has been much discussion in Finland as to whether a principle known as "sale breaks hire" – that is the lessee's right is merely an obligatory right – applies. This principle originates from older Swedish law (Finland was part of Sweden until 1809) and is still quite influential in Sweden, too (Håstad, 2002; Millqvist, 2009). According to the prevailing view in Finland, the principle (or rule) still applies, although this opinion has been heavily criticized (Tepora, 1999; Kuusinen, 2011; Kaisto and Tepora, 2012). Even if a utilitarian theory were followed, one can ask if it really is so clear that the lessee's right should not have third party effects (Tuomisto, 2004; Lilleholt et al., 2008).

The legal position of a lessee can also be problematic in terms of the relation between the lessee and the creditors of the lessor. What happens, for example, if the lessor goes bankrupt or the object is repossessed by a bailiff? In Finland, for example, being a lessee involves considerably more risks than being a buyer in this regard. Even considering the case of a fixed-term lease, the lessee may lose their right for the benefit of creditors. For example, the Supreme Court concluded in KKO 1997:6 that in the case of financial leasing the leasing contract did not bind the bankruptcy estate of the lessor.

In summary, in relation to the property pillar, a number of property law characteristics may obstruct or slow down the transition to CE types of business model such as PSS – practices that make ownership of a property appear as a 'better' right compared to, e.g. leasing, being one important example. If sustainability is a leading principle that should be prioritized, as we argue in this paper, then new legal practices and rules need to be developed in this context.

4.2. IPR-related obstacles to foster the CE

Generally speaking, the IP system should provide incentives to foster innovative and creative activities, by awarding an exclusive, temporary, and limited right to the creator of an artistic work or the inventor of a technical innovation, while also balancing societal interests. This is the underlying structure of the IPR system, independently of whichever theory the legislator relies upon to justify property. However, what relying on one theory instead of another does change is how much focus is placed on protection in respect to access, that is, how much emphasis is placed on societal values compared to the private owner's interests. Under the current utility and incentive-based approach to (intellectual) property, public interests, such as environmental sustainability, are often taken for granted or ignored and subordinated to private economic interests. As such, societal values are, when considered, channelled into the system via the back door of exceptions and limitations (E&L) to the property right. That is to say: societal values other than economic efficiency are usually the exception to the main rule), rather than taken into account directly when defining the actual scope of protection.

For instance, if we take patent law as an example here, we see that practices that might contrast with the purposes of the CE are at least those related to possibilities to repair protected properties for commercial purposes. In European patent law, the principle of exhaustion means that once a patented item is put on the market with the authorization of the patentee, the right holder no longer has any enforceable right to control the subsequent resale, importation or use of that same physical item within the domestic market (see e.g. Agreement on a Unified Patent Court, Art. 29). Even though the loan and 'ordinary' repair of protected property are covered by the exhaustion principle, 'ordinary' repair (including maintenance) is allowed only insofar as it does not equate to 'making' the invention. However, the distinction between (illegitimate) 'making' versus (legitimate) 'ordinary' repairing is not straightforward: although making copies of someone else's patented invention is an infringement, it is not clear whether and to what extent purchasing a patented item and subsequently modifying it or repairing it is allowed. Indeed, whether repairing a patented good by replacing parts of it qualifies as 'ordinary' repair or not is a question that often needs to be addressed on a case-by-case basis (Ballardini et al., 2018). In fact, there is no harmonization as to the interpretation of 'ordinary' repair in the EU. Notwithstanding, it seems agreeable that the key factors usually taken into consideration by European courts when deciding on issues of 'making' as opposed to 'ordinarily' repairing patented properties include:

1. Whether and to what extent the *technical effects* of an invention are embodied by the component replaced.
2. The *need* for repair of the product (estimated with respect to the *normal* working life of the device).
3. The *extent of the repair* compared with the manufacturing process of the original product.
4. The *extent* to which the repaired part *competes with the original parts.*[1]

Factor 2 is particularly problematic for our purpose. In fact, to take as the main point of reference the 'normal' working lifespan might lead to unbalanced results when considering repairing

[1] E.g. *United Wire Ltd v Screen Repair Services (Scotland) Ltd* [2001] F.S.R. 24 HL, *Schütz (UK) Ltd v Werit (UK) Ltd (Rev 1)* [2013] UKSC 16 (13 March 2013), BGH 14.07.1970, GRUR 1971, 78, 80 *Diarähmchen V, BGH 17.07.2012, docket no. X ZR 97/11 Palettenbehälter II, available in German at:* http://juris.bundesgerichtshof.de/cgi-bin/rechtsprechung/document.py?Gericht=bgh&Art=en&sid=3c6d49f845dcefd695bb195c4e4722bb&nr=61447&pos=0&anz=1. See the English translation in *IIC, Pallet Container II (Palettenbehälter II) (2013) 44 at 351–360, 351,* DOI 10.1007/s40319-013-0044-3*; Trommeleinheit [Drum Unit] – court docket: X ZR 55/16, GRUR-Prax 2018, 50 of the 24*th *of October 2017.*

activities (Pihlajarinne, forthcoming 2019). On the one hand, this makes sense, as the doctrine of exhaustion in IP law dictates that a purchaser should be allowed to use a product within its 'intended use'; thus, repairs within the 'normal' lifespan of products should be possible (Kohler, 1900). On the other, however, the 'normal' lifespan of a product is usually assessed on the basis of 'common understanding in society',[2] which might not necessarily be based on sustainability arguments. Moreover, patent holders' way of, for instance, designing a product might impact on its lifespan (Heath - Mori, 2006). Planned product obsolescence, i.e. a policy of planning or designing a product with an artificially limited useful life, so that it becomes obsolete (i.e., unfashionable, or no longer functional) after a certain period, might also play a role in this context. To make this problem even worse, different European courts have disagreed on whether and to what extent producing, transforming, assembling or even building a product is legitimate (i.e. whether it counts as an 'ordinary' repair or not). Looking at the existing case law, it can be said that most national interpretations seem to favour right holders, impeding possibilities for repairing protected goods, and thus, contradicting the aims of the CE (Ballardini et al., 2018).

Indeed, the concern that current IP frameworks do not reflect sustainability goes beyond practices related to ordinary repair in patent law. For instance, even though some efforts have been put in place in national and international patent policies to promote sustainable technological innovations, these are mainly 'soft' policy instruments. Illustrations include measures to fast-track 'green' patent applications[3] and specific patent classifications for climate-change mitigation inventions have been created (for e.g. class Y02 - Climate change mitigating technologies and Y04S - Smart grids in the EPO classification scheme[4]). Moreover, and more fundamentally, if we look at what can or cannot be protected by patent law (both in legal provisions and in their interpretations), we see no reference to environmental sustainability at all.

It is to be noted that this kind of incentive- and ownership rights-centred trend is not only reflected in how patent law is conceived of and interpreted, but is rather a common way of conceiving of most IP rights in general (Ballardini and Alén-Savikko, 2019). Notwithstanding this mainstream way of thinking, however, we must not blithely assume the role of IPR as an incentive. For instance, there is, after all, a significant literature that challenges the role of IPR incentives, arguing, for instance, that creativity may flourish in many domains with less reliance on IP (Lacey, 1989; Geller, 2000; Tschmuck, 2002; Raustiala and Sprigman, 2006; Raustiala and Sprigman, 2006, 2006). Even though this paper does not go so far as to conceive of a world without IPR, a re-balance in the weighing of interests between protection and access seems to be essential in order to foster CE ways of thinking in IP law.

5. Looking back, thinking ahead: fostering the CE via social panning types of practices in private law

The key examples discussed above indicate how the mainstream vision of property (including intellectual property) in Western legal regimes strongly reflects the individual owner's personal and economic interests. Moreover, they highlight how this perspective has become untenable in a world where the impact of tangible and intellectual property use on ecological integrity should actually be prioritized.

Public law regimes, such as those of the Waste Framework Directive and the EcoDesign Directive, are important and relevant, but insufficient. For example, designing requirements for repairability of all possible products within the framework of the Eco-Design Directive, similarly to those currently passed for household appliances, would require decades of work by administrative bodies, and still the ultimate result would not be comprehensive enough. Moreover, it might well be that what is achieved in public law could become ineffective or even blocked by private law regimes if the goals of the two areas are not aligned. For instance, the goals behind the recent EU regulation in favour of the right to repair for household appliances might be hampered, especially in the case of IPR-protected goods. Examples like this tell us that if the ultimate goal is to embed CE and sustainability principles into the whole EU legal framework, as we argue, there might be a need to take a step back and re-think how areas of private law, like the property pillar, should also be framed and structured. This change could occur should the legislator switch the way of conceiving of (tangible and intangible) property from the current mainstream utility approach to a more social-planning type of practices. This goal could be achieved via implementing legal practices that better balance protection and access, prioritizing environmental sustainability values.

As to property law, there are many possibilities to exercise more social-planning types of practices. As studied in this paper, the traditional view of the lessee's right as merely an obligatory right can be challenged. This could help to promote important business models for the CE, like use-oriented PSS. Even though the main focus in section 4.1 has lain on product leasing, the arguments presented largely apply to renting or sharing and product pooling as well. From the point of view of property law, sustainability can be used as an argument for granting a right to use effective against everyone, i.e. the status of a limited proprietary right.

Sustainability in its many dimensions is achieving ever more attention in property law – and rightly so. For example, Akkermans (forthcoming 2019/2020) argues that sustainability does not really conflict with legal certainty and durable legal relations, two traditionally important starting points in property law. According to him, it is important to "become more aware of the context of our property law. Why do we have the rules that we use and why do we provide content to these in the way that we do?" Additionally, Akkermans recognizes the influence of the mainstream vision of property, writing about liberal and neo-liberal foundations that "have gained the upper hand in the last decades".

A distinguishing feature of property law issues is that they can be quite difficult to spot, especially for a non-lawyer. Some background legal knowledge is required in order to comprehend certain legal outcomes and their relevance for CE business models. For example, when a movable object like a window or a staircase is incorporated in a building, the rule of *accessio* may say in many jurisdictions that this object becomes the property of the person owning the land and the building. This, of course, poses a problem for a CE business model in which the supplier of a movable object is supposed to retain ownership. Starting from Dutch property law, the topic has been, among others, studied by Ploeger et al. (2019), pointing out some serious obstacles to certain forms of CE business models. If we want to promote PSS, for example, it is worthwhile asking in many jurisdictions whether the rule of *accessio* should be revised.

As explained, from the point of view of IP law (especially in the context of patent law), one main impediment for fostering CE types of activities relates to whether and to what extent someone is able to legitimately repair protected goods without infringing upon the patented invention. Arguably, one option to solve the problem

[2] See for e.g. the reasoning in the German Supreme Court in BGH, 17 July 2012, X ZR 97/11 (*Palettenbehälter II*).

[3] See Patent Prosecution Highway (PPH) at: https://www.epo.org/news-issues/news/2017/20171004a.html and Cooperative patent classification at: https://www.cooperativepatentclassification.org/index.html.

[4] See: https://www.epo.org/news-issues/issues/classification/classification.html.

could be to include an explicit exception in IPR regimes, according to which repairing (and reusing) protected goods would be allowed (also for commercial purposes) in general, or under certain well defined conditions. After all, some literature does argue that IPR should not be used to inhibit the right to repair from being fully implemented, even supporting the view that a right to repair would actually be justified by the very same rationales that have traditionally been used to justify IP rights. For instance, Grinvald and Ofer claim that "even to the extent that the social interests underlying a right to repair are external to the values underlying intellectual property rights, this does not mean that these interests cannot be accorded significant weight in intellectual property policymaking" (Leah Chan and Ofer, 2019). While this may sound like the easiest way to achieve some of our goals (e.g. embedding environmental values related to repairability into the concept of intangible property), the answer is not so straightforward. First, several important court decisions have agreed that e.g. in patent law there is no such thing as an 'implied right to repair', while judges only have to answer the question whether the defendant is 'making' the claimed product.[5] Second, to develop clear directions as to when and under what conditions an action should amount to 'making' the product or not, and to harmonize this in a law at European level (for instance within the framework of the Unified Patent Court Agreement in the context of the yet-to-come Unitary patent system) might be quite tricky, as the issue is often dependent on individual case-by-case related circumstances. Third, and perhaps most importantly, if fostering sustainability within the (intangible) property concept is a priority, this proposed change might seem to be too soft a measure, both because it only tackles the issue of repair in patent-protected property (but not issues related to environmental sustainability and intangible property in general) and because it is – again – another way to channel societal values (other than economic efficiency) into private law via indirect ways. As previously mentioned, not only is addressing the issue mainly via adding exceptions to the main rule not enough, but increasing exceptions also add complexity and fragmentation to the system, ultimately decreasing legal certainty (Pihlajarinne and Ballardini, 2020).

Instead, another, more ambitious, option could be to address the key problem related to the way we conceive the 'normal' life-span of protected property when assessing whether or not there is an infringement. As explained in section 4.2., this is a major problem in terms of enabling a CE vision in e.g. patent law. One way for intellectual property to switch from a pure utility perspective to a more social-planning one (thus better reflecting important values such as environmental sustainability), might be for European courts to consider arguments related to the environment while determining concepts like, for instance, what is to be considered as the 'normal' lifespan of particular protected property involved in infringement cases (Pihlajarinne, 2020; Pihlajarinne and Ballardini, 2020). Indeed, in a society where environmental sustainability has become such a fundamental value, this switch would enable the IP system to better foster the development of what is conceived and understood as a just and attractive culture, in line with a more social-planning vision (Fisher, 2001). This change in interpretation could advance greater socio-environmental-economic equality, creating a culture that could encourage both development of more durable goods and repair of broken products. Indeed, this would also mean incorporating into IP law the set targets of *inter alia* the EU EcoDesign Directive and its related implementing measures, not only in relation to eliminating planned product obsolescence but also in respect of enhancing repair activities. Even though we have here confined our analysis to patent law, arguably this change might also be sound for most other IPR (Ballardini and Alén-Savikko, 2019; Pihlajarinne and Ballardini, 2020).

On a more general level, it is worth mentioning that several other measures could also be considered in order for the property framework in IPR to better reflect more social-planning types of practice that would foster the CE. *Inter alia*, these might include embedding sustainability values in the interpretation of concepts like ordre public, public policy and morality in patent and trademark law (e.g. Art. 13 of the European Patent Convention and Art. 3 (1) (f) of the Trademark Directive 89/104/EEC) so that for instance inventions or signs that are considered as not sustainable would be banned from protection. Moreover, sustainability could be further incentivized by working out the breadth and strength of protection in case of sustainable innovations and creativities. In addition, as sharing of knowledge is the key towards reaching a circular type of economy, open innovation models could also be better promoted via IPR (Ballardini et al., 2016; Van Overwalle, 2015).

6. Conclusions

In today's world, the market economy, or in fact a mixed economy, is the dominant system. As the starting point, markets decide what to produce, for whom and how. As such, the development of viable business models involves an impelling need for transition towards a CE. Because the functioning of markets is based on certain private law institutions, like the property pillar, private law always plays an important role in this context.

Repairability, refurbishability, reusability and shareability (including leasing) of products are crucial in order to achieve a CE. Even though the current EU public law framework acknowledges this fact, the intrinsic nature of public law makes such a regime short-sighted in terms of enabling this vision in a market economy. The same applies to similar national public policy measures. On the one hand, these can be rather effective. Examples gathered by Milios (2018) show that some Member States have been willing to go far beyond EU policies in their national strategies. For example, VAT (Value Added Tax) rates, partly in the hands of the Member States, are a powerful tool, as it is easy to promote certain business models, such as repair services, just by lowering the tax rate. However, overall, these public law measures per se are incomplete.

Private law regimes, like the institutions of property and intellectual property laws, might play a crucial role in complementing public law in the transition towards a more sustainable circular economy. At the same time, however, issues related to environmental sustainability have largely been ignored in private law, for example, in interpreting the concept of private property (including intellectual property). This is especially due to heavy reliance by private law regimes on pure economic efficiency, utility and incentives, with the main focus on individual rights ownership. In the worst case scenario, this mainstream utility approach can hamper or even totally block the noble environmental-related goals that public regimes are trying to promote. For instance, as previously explained, the fact that IPR might limit possibilities to repair IP-protected goods potentially hinders the goals of the recently passed EcoDesign implementing measures on the right to repair household appliances. This is but one example of such possible clashes.

Green types of argument should enter the door of *all* legal regimes. This includes private law, where a better balance between private property and societal interest should be fostered. Ultimately, and more generally, a shift from pure utility to more social-planning type justifications for (tangible and intangible) property might very well be the only feasible way to achieve sustainability,

[5] See e.g. *UK: United Wire Ltd v Screen Repair Services* (in the UK) fn 2 above, and LG Düsseldorf GRUR 1988, 116, 119 Ausflussschieberverschluss (in Germany).

thus putting the overall goals of both public and private regimes on the same path towards the reach of a sustainable CE.

CRediT authorship contribution statement

Rosa Maria Ballardini: Conceptualization, Writing - original draft, preparation, Investigation, Writing - review & editing. **Janne Kaisto:** Conceptualization, Writing - original draft, preparation, Investigation, Writing - review & editing. **Jukka Similä:** Conceptualization, Writing - original draft, preparation, Investigation, Writing - review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors would like to thank all those who have commented on previous versions of this draft, especially Bram Akkermans, Anette Alen-Savikko, Jussi Kauppila, Corinna Casi and Juha Vesala.

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