

Property Regimes

Matthew Canfield

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Edited by Marie-Claire Foblets, Mark Goodale, Maria Sapignoli, and Olaf Zenker

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Abstract and Keywords

Property regimes refer to the political, legal, and economic systems through which societies order their relationships between people with respect to valued things. Anthropologists and legal scholars have long been engaged in a dynamic dialogue about the organization and practice of property regimes. However, whereas legal theory has been uniquely concerned with ownership and private property as a system for allocating scarce goods and resources, anthropologists have investigated how property is constructed and shaped by everyday practice, illuminating how the distinctions between law and practice mutually constitute power relations. This chapter reviews how anthropologists have attended to aporias of property theory by ethnographically analysing conflicts and transformations between property regimes. It surveys anthropological insights into three continuing processes of property regime transformation: decolonization, privatization, and enclosure. In addition, it analyses two emergent processes around which property claims are being reconfigured: dematerialization and rematerialization. The *dematerialization* of property through informational and financial capitalism is occurring at a time when industrial modes of carbon-dependent accumulation are facing ecological limits brought on by climate change. However, technologies of informationalization and financialization are also *rematerializing* property regimes by constructing new calculative devices and global markets for increasingly limited natural resources. How these emerging regimes shape social relations between people, the distribution of social entitlements, and the boundaries between persons and things offers an important field of ethnographic enquiry.

Keywords: land, personhood, commons, privatization, decolonization, privacy, data, colonialism, Anthropocene, financialization

Introduction

Property regimes refer to the political, legal, and economic systems through which societies order their relationships between people with respect to valued things. Although societies construct property arrangements in different ways, property is a social institution of all collective life—a system of appropriation, value allocation, and distribution of power

and control. Property is thus a connective thread between all economic, political, and legal orderings. Anthropologists' insistence on studying the total social relations involved in property regimes distinguishes anthropology from other disciplines. Whereas legal theory has been uniquely concerned with ownership and private property as a system for allocating scarce goods and resources, anthropologists have investigated how property is constructed and shaped by everyday practice, illuminating how the distinctions between law and practice mutually constitute power relations.

Today, changes in the organization of the global economy are producing proliferating property claims to immaterial objects of knowledge such as data and debt. The *dematerialization* of property through informational and financial capitalism is occurring at a time when industrial modes of carbon-dependent accumulation are facing ecological limits brought on by climate change. However, technologies of informationalization and financialization are also *rematerializing* property regimes by constructing new calculative devices and global markets for increasingly limited natural resources. How these emerging regimes shape social relations between people, the distribution of social entitlements, and the boundaries between persons and things offers an important field of ethnographic inquiry.

In this chapter, I review how anthropologists have attended to aporias of property theory by ethnographically analysing conflicts and transformations between property regimes and what these insights suggest about emerging forms and regimes of property. In recent years, several excellent overviews of the anthropology of property have been written (see Hann 1998; Verdery and Humphrey 2004; Strang and Busse 2011; Busse 2012; Turner 2017). The broad scope of property's impact on social life means that property is a central category for anthropologists and lawyers across a broad range of subfields. Therefore, in this essay, I focus on anthropological insights into three continuing processes of property regime transformation: decolonization, privatization, and enclosure, as well as emerging processes of de- and rematerialization.

The 'nature' of property

Legal and anthropological scholarship has been entangled in an ongoing dialogue about the nature and practice of property since the earliest anthropological studies. Henry Sumner Maine and Louis Henry Morgan both pointed to property as a defining feature in the evolution of human organization. In the nineteenth century, both authors offered teleological accounts of human development that were defined by the transition from open-access regimes of property inherent in 'savage' society to the apex—'civilization'—characterized by private property. These early anthropological accounts, which were constructed in order to furnish evidence for a natural progression to Western civilization, offered legal scholars justification for the expansion of private property regimes. Yet although the common law was premised on the mutual dependence of individual private property (*dominium*) and monarchical sovereignty (*imperium*) (Koskenniemi 2017), even the common law's most fervent defenders were wracked by what Carol Rose (1998) describes as 'own-

ership anxiety'. This anxiety reflected a long debate within Western philosophy over the relative virtues of collective and individual property.

Liberal theorists attempted to solve the friction between nature and private property by drawing on an imagined political anthropology that necessitated viewing private property as a natural right that enabled peaceful prosperity and state sovereignty. This theory was informed by a historical context of nation-state formation, capitalist development, and colonial expansion (Macpherson 2011). Bhandar (2018) points out that questions about law in the colonies had a constitutive effect on Western legality (see also Hussain 2009). Locke's labour theory of property—in which rights to ownership stemmed from the application of one's human labour to transform and improve land—was not only based a theory of the 'possessive individual', but also on particular forms of cultivation. These theories, in turn, were developed to racialize indigenous subjects. As Bhandar explains, assumptions about private property were 'articulated through the attribution of value to the lives of those defined as having the capacity, will and technology to appropriate, which in turn was contingent on prevailing concepts of race and racial difference' (2018: 4). The mutual constitution of property and personhood, race and privilege, based on an imagined state of nature remains an enduring legacy of dominant private property regimes (Harris 1993).

Moreover, often overlooked is the way that property distinguished nature from society. Neil Smith (2008) points out that the labour theory of value that turned nature into property constituted a contradictory ideology in which nature was constructed as external to humankind. The same logics used to subordinate indigenous inhabitants and women were premised on a belief in the virtue of dominating nature. This ideology distinguishing nature from culture, however, is now being reassessed as climate change compels political and legal theorists to reassess how dominant ideologies of property have produced environmental, racial, and gendered subordination (Chakrabarty 2009).

Since Malinowski ([1922] 2002), anthropologists have turned away from evolutionary accounts of property and cultural development, focusing instead on relativizing and denaturalizing liberal legalism's singular focus on private property. This absence of 'ownership anxiety' and the relativist epistemology of anthropology marks a major point of departure between anthropological and legal scholarship on property. For anthropologists, property is an analytical concept that refers to 'the many ways in which rights and obligations, privileges, and restrictions govern the dealings of humans with regard to resources and objects of value' (Turner 2017: 26). Riles (2004) suggests that the difference between legal and anthropological approaches to property lies in different relationships to means and ends. Whereas for anthropologists, property is a means for understanding social and political relations, for jurists, property is a means to produce order, reduce conflict, and allocate scarce resources. For Wiber (2015), therefore, property serves as a 'boundary object' that enables interdisciplinary dialogue.

Ethnographic approaches to property regimes

Property regimes are typically categorized through one of four ideal types: open access, common property, state property, and private property.¹ As the Benda-Beckmanns and Wiber point out, however, property regimes ‘cannot be easily captured in one-dimensional political, economic or legal models’ (2009: 2); they are multi-faceted and multifunctional. Anthropologists thus analyse property regimes empirically.

Turner (2017) describes three different approaches to conceptualizing property regimes—the ‘triangle’ of property’s components, the ‘bundle of rights’ metaphor, and the four ‘layers’ of property’s institutionalization. The first analyses property regimes by investigating the three elements of property regimes: actors, valuables, and rights and obligations. Anthropologists have problematized each category (Verdery and Humphrey 2004). For example, property theorists usually assume a direct relationship between persons and things, but anthropologists have pointed to the way in which property actually creates particular types of persons and ‘individuals’. Marilyn Strathern (1988) famously argued that Papua New Guinea’s Mt. Hageners are not individuals, but ‘dividuals’—unstable subjects that are constituted through their relations with others in a social context. Through her account, Strathern illuminated how the bounded individual is in fact a culturally contingent artefact of the liberal paradigm of property. Anthropologists have also sought to unsettle the distinction between subjects and objects inherent in the valuables, instead showing how constituting objects is a process of boundary construction and negotiation (Hirsch 2010; Blomley 2016). A key thread of this research has come from feminist approaches which have challenged the assumption of women as objects of property and men as owners, and research that attends only to the role of men in exchange (Weiner 1976; Hirschon 1984). More recently, some scholars have turned to queer theory and relations to analyse the way in which the subject-object relation is subverted (Davies 1999). Anthropologists have also problematized the concept of ‘ownership’, demonstrating that exclusivity almost never entails complete dominion, but is part of an ongoing process of social communication, claiming, and symbolic action (Strang and Busse 2011).

While the ‘triangle’ metaphor is useful for disassembling the components of property, the metaphor of property as a ‘bundle of rights’ remains the dominant approach in legal scholarship. First articulated by Maine (1864), this bundle metaphor imagines property as a series of rights and obligations that includes, among other relations, the rights to possess, transfer, and access property (see Honoré 1961). Identifying the ‘sticks’ of the bundle is becoming increasingly complex, especially with the rise of informational capitalism and financialization, as I describe below. Nevertheless, the bundle metaphor is helpful in breaking down that multiplex rights, relations, and obligations constituted through any property regime.

Finally, Benda-Beckmann, Benda-Beckmann, and Wiber (2009) suggest a third approach—that property regimes can be analysed by attending to the four layers of social organization in which they are constructed and practised: the ideologies of property, their political institutionalization, the social relations through which property is claimed and trans-

ferred, and the practices where the first three layers intersect. The layers approach points analysts' attention to the sources and actors from which particular ideologies of property emanate. Today, these are increasingly transnational. While property was at the centre of the colonial legal endeavour, property claims were reconfigured through new forms of global legality beginning in the 1950s. Anghie (2007) documents how, after decolonization, former colonial powers articulated new ideologies of law that naturalized Anglo forms of contract law in order to secure private property rights to natural resources in their former colonies. The emergence of 'transnational law' secured property rights beyond sovereign authority and blurred the distinctions between international public law and private law to produce a new form of global governance by contract (Cutler and Dietz 2017). The export of U.S. legal models continued with the rise of neoliberalism in the 1970s and 1980s. Most recently, the Agreement on Trade-Related Aspects of International Property Rights (TRIPs), which was signed in 1994 and incorporated into the World Trade Organization (WTO), vastly expanded the private property protections to immaterial goods and resources. TRIPs and neoliberal globalization have not created a single global regime of property rights, but rather have generated resistance and friction, producing novel local property arrangements (Turner and Wiber 2009). The emergence of transnational law and regulation of property has significantly expanded global legal pluralism, requiring that attention be paid not only to the layers of property, but also to the different sociopolitical scales at which ideologies of property and the political institutionalization of property rights occur.

Finally, an increasingly important concern for anthropologists is the property relations in which they are embedded vis-à-vis their interlocutors. Archaeologists once thought of themselves as cataloguers and collectors of a universal heritage of humankind, but they have become increasingly accountable to the communities within which they work. The Native American Grave Protection and Repatriation Act in the United States (NAGPRA) (1990) transformed archaeological practices by giving Native Americans property rights in their cultural patrimony and grave goods (Ferguson 1996). Similarly, sociocultural anthropologists may now find themselves in encounters with interlocutors who themselves are suspicious of the 'intellectual trespass' historically and contemporaneously perpetrated by anthropological appropriation of indigenous knowledge. This concern over 'cultural appropriation' has become an increasingly important discussion between anthropologists and their interlocutors (Simpson 2007; Brown 2009; Berson 2010).

Property regime transformation: constructing persons and state power

Property regimes have been at the centre of efforts to promote social transformation. Yet whether proposed from the top-down or bottom-up, those who endeavour to reform property regimes have consistently encountered challenges. Ethnographic studies reveal how these transformations become entrenched within collective social relations that often per-

sist in the face of reform. Scholarship on property regimes has focused on three enduring contexts: decolonization, privatization, and enclosure.

Colonial and postcolonial property regimes

The first context in which anthropologists and lawyers were concerned with property regimes was in the colonial era. Colonial powers dealt with indigenous property regimes in one of three ways (Klug 1995)—through direct conquest, negating indigenous rights via the doctrine of *terra nullius*, or establishing indirect rule by recognizing ‘customary law’. Each approach has generated enduring conflicts. In settler colonial regimes that sought to extinguish indigenous rights through negation or conquest, for example, anthropologists have shown how legal processes of land restitution often reproduce the liberal logics of settler colonialism by providing a grammar of rights that requires indigenous and Aboriginal peoples to articulate a static collective identity that reifies the dominance of the state through the guise of late liberal ‘multicultural’ society (Clifford 1988; Povinelli 2002). In other cases, such as South Africa, which have undertaken land restitution processes as part of a broader political project of transitional justice, conflicts over property have raised critical intra-communal conflicts over the legitimacy of law (Zenker 2014).

In places where a colonial variant of ‘customary law’ was imposed—particularly in Africa—the social relations of property imposed through colonial and postcolonial law continue to produce conflict over land, authority, and belonging (Chanock 1991). In the 1980s, international finance institutions required many poor states to engage in structural adjustment and land titling programmes as a condition for assistance with loan repayments. Yet as Sara Berry (2017: 109) notes, these were ‘superimposed on rather than replacing customary and colonial land laws and practices’, thereby producing a messy set of conflicting relations and law. Recently these tensions have once again been ignited as transnational corporations and foreign states engage in a new ‘scramble for Africa’ through land and resource grabs, which I describe below. States have often facilitated these land grabs by claiming authority over land under customary tenure, thereby entrenching their own power and producing further domestic conflict (Peters 2013).

Socialist property regimes and neoliberal privatization

In contrast to liberal-capitalist regimes of private property, socialist regimes of property aspired to abolish bourgeois property (Marx and Engels 1978). Marx elaborated how capitalism gave birth to the commodity form through a law of value that subordinated relational processes of production and social values to the value of market exchange. Pashukanis (1987) further developed Marx’s theories to describe how private property and the commodity form produced the individual rights-bearing subject. Transforming property regimes was thus part of a larger effort to develop socialist personhood (Şerban 2018).

Following Marx's prognosis, the Soviet Union sought to create a socialist property regime, starting first with the nationalization of all land and assets and social ownership of productive assets. Yet neither the Soviet Union nor its satellites ever completely abolished private property. Rather, as Verdery (2003) details, property was embedded within a system of administrative rights that reflected the hierarchies of value inherent in socialist ideology. With the fall of socialism and the ascendance of the neoliberalism, anthropologists and legal scholars investigated the process of privatization. Both Hann (1993) and Verdery (2003) describe how the imposition of private property regimes may have given small-scale producers formal title, but failed to provide 'effective ownership', because those who owned land did not have the means of production or markets to profit from it. Both authors point to the fact that the hierarchies inherent in socialist property regimes continued to persist, leading to new forms of inequality that economists failed to estimate.

Neoliberal institutions continue to insist on private property regimes by funding projects for land titling and market-based agrarian reform (Lahiff et al. 2007). Ethnographic studies, however, indicate that the insistence that private property stimulates investment oversimplifies property regimes. As Woodhouse notes, 'customary tenures acts neither as an obstacle to investment ... nor as an inalienable safety net for the poor' (2003: 547). The movement for market-based agrarian reform is being contested by a growing set of transnational agrarian movements calling for popular land reform that supports rural workers and small-scale food producers. Supporters of these movements argue that the emphasis on private property 'ignores need in favour of the demands of rule and order' (Rosset et al. 2006: 3). Furthermore, anthropologists point out that indigenous peoples may also have different visions of property and sovereignty. Verran (1998) suggests that Aboriginal communities have radically different epistemological systems of knowing and acknowledging land title. More recent work in Latin America has emphasized an alternative set of relations between peoples and land inherent in some indigenous cosmologies (De la Cadena 2015).

Enclosures and common property regimes

Since the development of modern capitalism, the enclosure of common property regimes has served to remove small-scale producers' means of subsistence, thereby engendering greater reliance on the cash economy (Thompson 1977)—a process that Harvey refers to as 'accumulation by dispossession' (Harvey 2003). The push to provision of land through private property regimes has been supported by a throng of neoclassical and neoliberal economists, who argue that communal arrangements are inefficient. Most famously, Hardin's (1968) 'tragedy of the commons' thesis suggested that communal property leads to resource depletion because it fails to provide an incentive to invest and conserve resources. Since then, scholars such as Elinor Ostrom have sought to distinguish commons from open-access property regimes. In order to be sustainably managed, Ostrom (1999) argued, commons require boundaries and exclusions regarding who has access. Anthropologists have contributed this work by analysing the communal norms by which common property regimes are constituted and how they distribute power relations. In her re-

search on oceans and fisheries, Mansfield (2004) suggests that the renewed focus on the commons has paradoxically facilitated neoliberal enclosures by reconstituting commons as an approach compatible with property rights to enable environmental conservation.

Today, questions about how to handle collective action problems related to ‘the global commons’—the atmosphere, oceans, outer space, and other common-pool resources—have paradoxically generated new regimes of private property rights through tradable environmental allowances. These state-managed processes deploy market-based processes for the allocation and conservation of common resource stocks, such as carbon emissions credits, sulphur dioxide allowances, and future catch allowances in fisheries (Rose 1999). In response, scholars have sought to describe how capitalist enclosures through private property may be resisted through ‘value practices’ that engage in a constant process of ‘commoning’ (Angelis 2006).

Dematerializing property

For much of history, land has served as the historical paragon of property. While some English theorists distinguished ‘real’ and ‘personal property’ (corresponding to the civil law distinction between ‘movable’ and ‘immovable’ property), property, with a few exceptions, referred to relations with regard to physical objects. While Lowie (1928) described a variety of forms of what he called ‘incorporeal property’ within non-capitalist societies, these forms of property usually involved more relational rights and were anathema to the exclusionary paradigm of private property. However, over the past several decades, incorporeal or immaterial forms of property have become the primary site of accumulation in contemporary capitalism.

The dematerialization of property is a product of the reorganization of global capitalism. In the 1970s, inter-capitalist competition led to a global economic crisis that generated three transformations. First, as a result of the economic crisis, the United States unilaterally delinked the dollar from the gold standard, thereby dissolving the Bretton Woods system by which global capitalism had been organized. In doing so, the United States removed the ‘pretense in this framework of any “real” relationship between property and money’ (Hardt and Negri 2017: 198). The floating currencies that resulted from the end of the Bretton Woods system led to increasing financialization beginning in the 1980s. Second, after the crisis, states and multinational corporations sought out new forms of accumulation. While financialization was one product of the shift to post-Fordism, so too was the expansion of intellectual property rights to new cultural practices and biological materials. The expansion of these rights also spurred new claims to autonomy and sovereignty through the language of ‘cultural property’. Finally, new information and communication technologies, which both enabled the crisis and have since developed at a rapid pace, have transformed global production and payment systems, facilitating new claims to property that transform relations between persons.

Intellectual property rights

Intellectual property rights (IPR) comprise a family of rights that include copyrights and patents, as well as newer forms such as trademarks, trade secrecy, rights of publicity, cybersquatting, and database rights. For much of history, ideas and information were understood to be freely in the public domain. Early forms of IPRs emerged in Europe with the development of capitalism in the fifteenth century. The rationale for these rights was to incentivize creators or authors to make public their inventions by offering rights of exclusive ownership for a limited time period (May and Sell 2006). Beginning in the nineteenth century, however, IPRs began to expand. This proved to be problematic for the dominant liberal paradigm of property because information has typically been understood as a good within the public domain. As Boyle notes, proponents of IPR had to provide a 'convincing explanation as to why a person who recombines informational material from the public sphere is not merely engaging in the private appropriation of public wealth' (Boyle 2009: 50).

In seeking to square the contradictions of IPRs with liberal ideologies of property, proponents of IPRs have relied on claims to the creativity and uniqueness of the individual author. The 'author-function' recognizes the individual as a proprietor of knowledge who is thus entitled to rents. As Boyle notes, it provides a 'moral and philosophical justification for fencing in the commons' (2009: 56). The modernist Euro-American ideology regarding the author, however, is alien to many societies. Fred Myers, for example, points out the incommensurability of Aboriginal ideas of authorship with the Western understanding of art and culture (Myers 2002). Myers suggests that intellectual property operates as a system of what Latour (1993) describes as 'purification' that serves to rearticulate objects within dominant regimes of value. Strathern (1999) stresses the role of IPRs in creating scarcity by making knowledge transactable, valuable, and commodifiable.

The expansion of IPRs has been critical to new forms of accumulation and has generated new sites of resistance. One area in which IPRs have played a particularly important role in post-Fordist capitalism is in the expansion of trademarks—symbols, icons, names, or other signifiers that point to a product's manufacturer or origin. In an era when brands increasingly sought to merge corporate and personal forms of value, Rosemary Coombe describes how trademarks have become key commodified forms through which cultural authority is enacted and contested. She argues that they now operate as 'a central locus for the control and dissemination of those signifying forms with which identities and difference are made and remade' (1998: 29). Another area in which IPRs have expanded is in the domain of plant and human genetic resources. As Brush (1993) notes, biological information is among the most prized information that social groups possess. In the late twentieth century, the United States began to give monopoly rights to biological knowledge to developers of biotechnology. The expansion of ownership rights over plant genetic resources as well as human genetic resources has generated considerable political and regulatory conflict (Pollack and Shaffer 2009; Jasanoff 2011). Transnational agrarian movements have emerged to contest corporate power over seeds (Kinchy 2012), motivating new articulations of social identity and belonging (Fitting 2010). Communities around

Property Regimes

the world have also resisted the growth of bioprospecting for pharmaceuticals (Hayden 2003), culminating in new transnational agreements such as the Convention on Biological Diversity's Nagoya Protocol on access and benefit sharing. Nevertheless, scholars have warned that the expansion of IPRs serves as an 'intellectual land-grab' (Boyle 2008) and that agreements like TRIPs put the 'common heritage of humanity' up for grabs (Aoki 1998). Drahos and Braithwaite (2007) warn that the ceaseless expansion of IPRs could lead to a new age of 'information feudalism'.

Cultural property

In response to the expansion of IPRs, claims to cultural property have become a new resource for social groups struggling for political recognition, autonomy, and communal control (Anderson and Geismar 2017). Claims to cultural property draw on the framework established through IPRs, but entail a significant reconfiguration of international property law in the context of decolonization and late modernity (Coombe 2009). Indigenous communities, for example, draw on cultural property to articulate claims to protect their cultural heritage and material resources. Observers have suggested that claims to cultural property are inherently contradictory—that they reify culture as a static set of practices that can be 'owned' (Mezey 2007). However, anthropologists have shown how these arguments also miss the point—indigenous activists appropriate the dominant terms of intellectual and cultural property to construct new arrangements of exchange and entitlement (Geismar 2013). Geismar argues that copyright and intellectual property are sites of mediation between neoliberal legality and grassroots agency. Yet like all claims to property, the translation of practices into property is a process that is both constituted by and constitutive of power relations.

Property in big data and digital infrastructures

The rapid growth of new information and communication technologies is transforming economic activity, making it ever more virtual, networked, and reflexive. Castells (2009: 77) uses the term 'informational capitalism' to describe a global shift in which economic 'productivity and competitiveness of units or agents in this economy (be it firms, regions, or nations) fundamentally depend on their capacity to generate, process, and apply efficiently knowledge-based information'. While intellectual and cultural property reflect the rise of the information economy, new technologies have significantly expanded the kinds of information available to be mined, appropriated, and accumulated. As digital infrastructures and data become increasingly valued, they have emerged at the centre of debates over contemporary property regimes.

The data infrastructures of the networked economy that emerged in information and communication technologies represented an early frontier of property rights. The development of the personal computer in the 1980s was accompanied by promises of a technoutopian future that would vastly expand the public domain. Yet rather than being a global commons, individuals and corporations have acted aggressively to enclose access to codes and data by securing rights to exclusions through secrecy and patenting (Lessig

2005). This move to enclose data infrastructures has generated resistance from a cadre of hackers and programmers who have created a variety of quasi-legal forms in an effort to promote open-access property regimes. For example, Kelty (2008) and Coleman (2013) analyse how the Free and Open Source Software movement (FOSS) protested the copyright of code by creating new kinds of licences that seek to maintain code as an open-access regime. While the FOSS movement has, to some extent, been successful in seeking to open up the data infrastructures to common property regimes, digital technology corporations have also expanded the field of intellectual property, creating new layers of rights of the control, use, and transfer of information. The rise of licensing agreements such as the End User License Agreements (EULA) and Digital Rights Management (DRM) have allowed producers, platforms, and other intermediaries to maintain control over digital things by limiting consumers' ability to transfer or resell those objects. The growth of EULA and DRM led Perzanowski and Schultz (2016) to question whether digital life is leading to 'the end of ownership'. DRM not only curtails the property rights of consumers, it also allows copyright holders to collect extensive information and data on consumers' usage.

The collection, extraction, and commodification of data has thus emerged as one of the newest key factors of production in 'information capitalism'. Just as land, labour, and money were commodified with the emergence of capitalism, information and data have become new commodities subject to property claims in the informational age (Cohen 2017). Today, "big data" are constituted by capturing small data from individuals' computer-mediated actions and utterances in their pursuit of effective life' (Zuboff 2015: 79). They are collected from activities over the Internet, from a growing 'intelligent infrastructure' for objects and bodies, from corporate and government databases, and other sources of surveillance. The collection and control of these data are in turn driving corporate consolidation in everything from social media to farm machinery (Fraser 2019).

Control over data enables significant economic and social control, raising challenging questions about property rights. One way this has been approached is through increasing attention to infrastructure as a sociotechnical form that constitutes relations between public and private (Larkin 2013; Kitchin 2014). Paying attention to the materiality of 'big data'—where and how they are stored and accessed—provides another way of thinking about property and data (Hogan and Shepherd 2015). Others have focused on personal data as a form of personal and private property (Cohen 2012). As big data become increasingly integral to emerging strategies of accumulation, much of the debate about property hinges on what kind of 'thing' a datum is and the relations aggregated data entail. How we frame the problem of big data, whether through the framework of *individual* privacy or through a collective regulatory framework of 'surveillance capitalism', shapes the way in which property regimes will be constructed and designed (Dean 2016). With the approval and enactment into force of the European Union's General Data Protection Regulation (GDPR), however, private property regimes are emerging, once more, as the dominant framework for claiming control and possession of data.

Another sphere in which informational capitalism is constituting new valuables and relations between persons is through blockchain, smart contracts, and other payment systems (Nelms et al. 2018). Blockchain is a digital ledger technology for recording data and sharing it across a network of participants (Natarajan et al. 2017). By employing cryptographic methods to securely record data, it is being hailed as a way of sharing data about transactions as well as facilitating payment through new cryptocurrencies that have a range of applications, from land titling to recording IPRs. Proponents of blockchain suggest that it will revolutionize payment systems and property registries by making information securely available to the public. By loosening payment systems from their regulatory contexts, requiring secure identities across platforms, and creating a lasting ledger of exchanges, digital ledger technologies have the possibility of vastly expanding the kinds of persons and valuables that can be involved in exchange.

Financialization of property

Financialization is a process that has been driven by a search for new forms of accumulation in an age of increased competition and declining profits from production. It is facilitated by new information and communication technologies as well as by law. Through new financial instruments such as derivatives and securities, financialization enables speculative capitalization based on risk (Lee and LiPuma 2004). Not only have non-financial firms and banks become increasingly reliant on financial products, but so too have individuals across the globe to secure their basic needs (Martin 2002).

Ethnographic accounts document the changing forms of property in an age of financialization in two ways. First, anthropologists have examined how property relations have become reconstituted among the brokers, traders, banking officials, and other actors involved in the repackaging of assets and risk. Maurer examines how the practices of securities clearance and settlement in high-frequency trading—a process in which the property interests in a set of securities are transferred from one person to another—has reconstituted ‘the subject of property not as the bearer of rights but as a risk profile subject to the disciplinary practice of insurance’ (1999: 366). He suggests that changing definitions of property reconstitute personhood through new forms of governmentality that are deeply connected to the changes in the corporate form. Similarly, Annelise Riles describes how practices of collateral within the transnational derivatives market have redefined collateral from physical property or assets to a ‘kind of temporally delineated commons, or anti-commons depending on the specific rules of the transaction’ through new legal technologies of private governance (Riles 2011: 165). By rendering the highly technical and dematerialized definitions of property visible, anthropologists have sought to illuminate the political nature of these processes.

Second, anthropologists have investigated the ways in which financialization’s extension of credit and debt are reshaping social relations in everyday life (Peebles 2010). While relations of credit and debt are by no means new, the ability to repay debt based on personal credit in an era of financialization has been tied to changing understandings of moral personhood (Graeber 2011). However, widespread debt and default have also engendered

attempts by debtors to form counter-publics to construct shared identities around resistance to such predatory logics (Stout 2016), as well as to form new common property regimes by purchasing debt through debtors' unions (Appel 2015).

Rematerializations: the nature of property reconsidered

The dematerialization of property through informational capitalism and financialization is occurring at a time when existing forms of capitalism are facing ecological limits. Climate change is transforming the conditions through which humans meet their basic needs. It is also posing limits to fossil-fuel based forms of production and consumption on which capitalist expansion over the past two centuries has been based. In 2007–08, the world faced overlapping food, fuel, and financial crises, prompting a transformation in how productive resources are valued.

One effect of the overlapping crises of over-accumulation within neoliberalism has been a rush for productive land by a variety of global actors across the North and South. Activists described the surge in land acquisition after the 2007–08 global food crisis as the 'global land grab'. Though this framing emphasized the scope of such processes, Peluso and Lund point out that 'there is no one grand land grab, but a series of changing contexts, emergent processes and forces, and contestations that are producing new conditions and facilitating shifts in both de jure and de facto land control' (2011: 669). What is clear is that a new set of global actors are buying up large tracts of land to produce food, agrofuels, and for financial speculation, but the property relations are highly varied (Borras et al. 2012); how these property relations dispossess, dislocate, or shape social relations with previous inhabitants of land is an empirical question that anthropologists are well positioned to examine.

Land is not the only resource that is now being 'grabbed'. Fairhead, Leach, and Scoones (2012) describe the phenomena of 'green grabbing'—which is extending ownership and control over other productive resources, particularly through new calculative devices such as 'payment for ecosystem services' (PES), which calculates, commodifies, and marketizes conservation. PES is based on a 'global environmental-economic paradigm' that 'reduces organisms and ecosystems to their allegedly fungible components, and assigns monetary prices, calculated with reference to actual or hypothetical markets, to those components. The result is a panplanetary metric for valuing and prioritizing natural resources and managing their international exchange' (McAfee 1999: 134). Scholars suggest that the turn to green grabbing represents a new phase of capitalism that is restructuring the relationship between nature and society.

Today, climate change poses an existential threat to human and animal life. By framing environmental challenges as a threat to the 'global commons'—the atmosphere, oceans, and polar ice—efforts to ameliorate climate change have turned to reshaping property regimes. One important result has been the commodification of carbon through schemes

such as the EU Emissions Trading System and the Clean Development Mechanism, which seek to promote market-based processes of trading allowances for carbon emissions. Similarly, the Reducing Emissions from Deforestation and Forest Degradation (REDD) initiative creates a market-based process to purchase carbon offsets to prevent deforestation and forest degradation. The process of abstracting, objectifying, and commodifying carbon requires complicated calculative devices that are a product of law (Dehm 2019). These new initiatives are part of a broader approach to managing commons through tradable environmental allowances. Through this process of commodification, rights to emit carbon are being enclosed through emerging private property regimes. Whittington thus suggests that 'carbon is at the centre of a contemporary assemblage that is imaginative, materialist, heavily quantified, and oriented toward the technical modification of human affairs' (2016: 47).

The legal construction of new objects of value and property through the global climate regime has important implications for everyday social relations. Ethnographic studies of conservation initiatives in the Brazilian Amazon—a region which is critical for the mitigation of climate change—describe the emergence of new forms of 'speculative accumulation' in which colonists 'adopt the tools of environmental governance to the work of making and preserving illicit property claims' (Campbell 2015: 193). Campbell points out how climate change and environmental discourse are reconfiguring the value of different places, thereby shifting the ways in which property relations are organized and claimed. Similarly, as once valued coastal properties become increasingly dangerous as a result of both rising sea levels and increasingly extreme storms, they also engender reconsiderations about what is private and what is public. On one hand, legal scholars suggest that the Anthropocene requires new approaches to property that are less oriented around rigid ideals of ownership (Biber 2017; Sprankling 2017). On the other hand, however, if the Anthropocene is taken as a larger challenge to the externalization of nature that is constituted through capitalist property regimes, it may lead to re-evaluations of the relations between human and non-humans, the property rights of non-humans, and thus about the boundaries and hierarchies constituted between persons and things in dominant property regimes (Braverman 2018).

Conclusions

Anthropological and legal scholarship remain engaged in a dynamic dialogue about the organization and practice of property regimes. Transformations and reform of property, whether in the name of efficiency or equality, have consistently generated friction. Anthropology thus enables greater understanding of the productive role of this friction in generating relations between persons and things. Today, changes in the organization of global capitalism as well as new information technologies are the newest sources of friction, as they dematerialize some forms of property while rematerializing others. Data, debt, and carbon are rightfully prompting a new wave of 'ownership anxiety' and challenging the liberal legal models on which the distinction between public and private is based. Furthermore, the scale and scope of these new property regimes are generating

new counter-publics through which common property regimes are being claimed and organized. By ethnographically observing and analysing emergent property regimes, anthropological scholarship is poised to illuminate whether they deepen global inequality or can, in fact, ameliorate it.

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Notes:

(1.) In addition, Heller (1998) describes a fifth—the 'anticommons'—a property regime in which multiple owners hold effective rights of exclusion.

Matthew Canfield

Property Regimes

Matthew Canfield is Assistant Professor of Law, Politics, and Society at Drake University. His research examines the intersections of law, political ecology, and social movements in the context of global food and agricultural governance. His scholarly publications can be found in the pages of *Public Culture*, *Law & Society Review*, *Transnational Legal Theory*, and *Studies in Law, Politics, and Society*.