



**Existence value is the value of an object
in the natural world apart from any use of it
by humans.**

Jonathan Aldred

Land values as the social construction of scarcity

Benjamin Davy

Abstract

Land values reflect the social construction of scarcity. The polyrational theory of property and land values (B. Davy 2012 and 2014) helps planners and other policymakers understand how different perceptions of land values influence scarcity judgments. The notion of exchange value explains scarcity in terms of demand exceeding the supply of land in desirable locations. The notion of use value explains scarcity with respect to the range of individual and social utility (J. Bentham) or capabilities (A. Sen, M. Nussbaum) rendered by land available for desirable uses. The notion of territorial value explains scarcity as a function of spatial power gained through territorial sovereignty or land use rights. The notion of existence value explains scarcity with a view to the ecological functions of land (A. Leopold). The four social constructions of scarcity sometimes overlap: Superb environmental quality may result in higher prices of building land which is not exposed to fumes or noise, but located near a pristine forest or an attractive lake. The four social constructions of scarcity, however, are fundamentally different from each other. A scarcity of spatial commons such as public streets or public parks cannot be expressed in exchange values of streets and parks (but rather in the dissatisfaction of users). Accordingly, planners cannot manage scarcity easily, and certainly not through a simple trade-off between different types of land values. Polyrational scarcity management requires that planners be critically aware of plural land values and a mounting pressure to choose judiciously from their tool-box of available instruments.

You want too much
 You want too badly
 You want everything for nothing.

Joni Mitchell (1991)
 Windfall (Everything for Nothing)

Scarcity and the emergence of private property

Concepts of scarcity

Planners and other policymakers are fond of thinking about the goals and instruments of planning and land policy. Scholars abide and produce volumes on planning instruments that promise more effective, more efficient, more equitable, more sustainable, more resilient plans (Hartmann & Needham 2012; Janssen-Jansen, Spaans, & van der Veen 2008; Leshinsky & Legacy 2016). One of the aims of spatial planning instruments is the management of scarce resources, most prominently scarce land. But what exactly is 'scarce land?' This paper explores the relationship between land values and scarcity. It provides guidance to discussions of planning

instruments, yet the paper does not focus on the variety of available or proposed instruments of planning.

The field which usually deals with scarcity is called neither planning nor property; it is called economics. The economics textbook I studied in law school told me that 'in the world as it is, even children learn in growing up that "both" is not an admissible answer to the choice of "Which one?" ' and claimed that relative scarcity turns free goods into economic goods (Samuelson 1976: 18–19). The message is universal for economists: 'A resource is *scarce* when the quantity of the resource available isn't large enough to satisfy all productive uses' (Krugman & Wells 2006: 6–7). Economics is 'the study of scarcity, of how societies make choices concerning how to use their limited resources' (Stiglitz 1988: 10). Mainstream economists presuppose a naturalistic (or essentialist) definition of scarcity: Scarcity occurs, and the markets deal with it. For a much too long time, the only serious challenge to the

very narrow view on scarcity was John Kenneth Galbraith's haunting 1958 book about *The Affluent Society* (Galbraith 1960). Voices critical of the scarcity assumptions of mainstream economics were, no pun intended, scarce (Matthaei 1984; critical Gowdy 1986; responding Matthaei 1986). In the 1970s, the economic paradigm of scarcity was attacked from outside when a Club of Rome report attacked the notion of scarcity as a predominantly economic problem. Meadows et al. 1972 discovered the *Limits to Growth*, a scenario when economic growth irreversibly depletes environmental resources and threatens the survival of humankind. The dread of ecological scarcity inspired environmental movements, environmental policy, and the 'greening' of Western societies. In the face of the energy crisis of the 1970s, a special issue of *International Political Science Review* examined the significance of scarcity to political philosophy (Kincaid 1983; Moon 1983; Jennings 1983; Schaefer 1983; Stillman 1983). Although the mainstream cure for scarcity provided by economists seems to be technological progress and more supply, the assumptions of neoclassical economics have been constantly criticized (Panayotakis 2012). Some have also asserted that the scarcity of natural resources calls for a decrease in consumers' and producers' demands (Malenbaum 1975; Kincaid 1983). Recently, a fresh look at scarcity promises a new science of the 'true cost of not having enough' (Mullainathan & Shafir 2013).

Although this paper is concerned with property, land values and the social construction of scarcity, it is by no means an economic paper with lots of equations, but deals with planning, land, and property rights in a more narrative manner. Scarcity, I shall assert, is a plural standard that pertains to the market economy, but also to territorial politics, ecology, or the economics of having, using, belonging. In the remainder of the paper I shall discuss how different types of scarcity (locational scarcity, spatial power scarcity, ecological scarcity, capability scarcity) relate to different types of land value (exchange value, territorial value, existence value, use value). The four types of land values and scarcity, most of the time, are present simultaneously. If property (as an institution) responds to many voices, many rationalities (B. Davy 2014), it might be called a 'credible' institution because function presides over form (Ho 2014: 13–14). The simultaneous presence of different rationalities is typical of polyrationality (B. Davy 2008, 2012, 2014), yet difficult to analyze. Dealing with this difficulty, I shall limit myself to explaining the different types of land value and scarcity and discussing some implications for spatial planning, land policy, and property theory.

Scarcity rationalizes

Because the property rights determine the allocation of scarce resources, '[s]carcity is a presupposition of all sensible talk about property' (Waldron 1988: 31). Scarcity is a political concept which often is employed to rationalize desirable, but unpopular changes and reforms. Austerity programs—ranging from cuts in university budgets to the subjugation of debtor countries in the current European financial crisis—are justified by scarcity statements: 'You want too much. You want too badly. You want everything for nothing.' Such a strategy is not new. For example, scarcity already played a significant role in property narratives long before modern economics

was invented. In the 17th and 18th century, an age of rapid modernization of legal institutions, property theorists often preferred a naturalistic (or essentialist) view on scarcity. Such a naturalistic interpretation of scarcity (even if based only in an author's imagination) presupposes some fixed demand or supply in land and other natural resources from which an assertion of abundance or scarcity derives. Such assertions were used to justify private property. Take for example John Locke's labor theory of appropriation:

'As much Land as a Man Tills, Plants, Improves, Cultivates, and can use the Product of, so much is his Property. He by his Labour does, as it were, inclose it from the Common. ... He that ... subdued, tilled and sowed any part of it, thereby annexed to it something that was his *Property*, which another had not Title to, nor could without injury take from him. ... Nor was this *appropriation* of any parcel of *Land*, by improving it, any prejudice to any other Man, since there was still enough, and as good left; and more than the yet unprovided could use' (Locke 1698: 290–291 [II, §§ 31–33]).

In a world of abundant ('still enough') resources, Locke contends, private property cannot harm 'the yet unprovided.' The right of owning and using land in exclusion of the same right of everybody else is merely a matter of convenience. Abundance—the absence of scarcity—justifies private property. It is surely convenient to know which land or other resource have already been claimed in the land of plenty, and everybody, who wants more, simply has to move on a bit. However, perhaps private property can also be justified by scarcity? William Blackstone, in his *Commentaries on the laws of England*, justifies private property with the scarcity of land:

'The earth therefore, and all things therein, are the general property of all mankind, exclusive of other beings, from the immediate gift of the creator. And, while the earth continued bare of inhabitants, it is reasonable to suppose, that all was in common among them, and that every one took from the public stock to his own use such things as his immediate necessities required. ... As the world by degrees grew more populous, it daily became more difficult to find out new spots to inhabit, without encroaching upon former occupants; and, by constantly occupying the same spot, the fruits of the earth were consumed, and its spontaneous produce destroyed[.] ... Necessity begat property' (Blackstone 1766: 3 and 7–8 [Book II, Chapter 1]).

Intuitively, the introduction of an institution regulating the use of scarce land and other natural resources is plausible. It is less compelling, however, to suppose that this institution must be private property. The response to Locke's world of abundance or to Blackstone's world of scarcity very well could have been the improved design of common property (Frost 2000). If all land has been appropriated, private property in fact exacerbates scarcity, as John Stuart Mill has argued *against* exclusive land ownership:

'No man made the land. It is the original inheritance of the whole species. Its appropriation is wholly a question of expediency. When private property in land is not expedient, it is unjust. It is no hardship to any one to be excluded from what others have produced ... But it is some hardship to be born into the world and to find all nature's gifts previously engrossed, and no place left for the new-comer' (Mill 1848: 233).

The frequent argument *for* private property is, of course, the calamitous situation caused by the lack of exclusive rights to the fruits of the Earth. Richard Posner uses a bucolic setting to prevent policymakers from jeopardizing economic progress:

‘Imagine a society in which all property rights have been abolished. A farmer plants corn, fertilizes it, and erects scarecrows, but when the corn is ripe his neighbor reaps it and takes it away for his own use. The farmer has no legal remedy against his neighbor’s crop. Unless defensive measures are feasible (and let us assume for the moment that they are not), after a few such incidents the cultivation of land will be abandoned and society will shift to methods of subsistence (such as hunting) that involve less preparatory investment’ (Posner 2007: 32).

Private property, as an institution, secures the wealth and income stream provided by the landowner’s holding. Although private property (as right to exclude) makes resources scarce, without private property (as an institution), resources would be even more scarce. This claim is extended, far beyond the realm of economic thinking, to the political sphere: ‘Civic virtue does not prosper in a world in which courts refuse to protect either personal autonomy or property rights’ (Epstein 1985: 346). With good reasons, Ronald Dworkin (1980: 207) criticizes such declarations: ‘A society is ... not a better society just because it specifies that certain people are entitled to certain things.’ The underlying assumption of libertarian and liberal claims to the institution of private property is taking advantage of the naturalistic (or essentialist) view on scarcity: ‘Everybody wants!’ If private property deals with scarcity as a natural given, than the outcomes of property bargains will be efficient. I believe that authors like Mill, Posner, Epstein, or Dworkin are not so much concerned about scarcity and efficiency, but about the distribution of goods and burdens, and justice. They use ‘scarcity’ to rationalize their justice claims, presumably because *efficiency* is more acceptable than justice to ‘rational’ persons like economists, lawyers, planners, and other policymakers.

The social construction of scarcity and land values

Polyrationality and the plural meanings of scarcity and land

The best account I know of regarding the relationship between planning, property, and scarcity is Chapter 4 of Barrie Needham’s 2006 book *Planning, Law and Economics. The rules we make for using land*. Chapter 4 has a great title: ‘The economic language: making a good use of scarce resources’ (Needham 2006: 52–75). Chapter 4 considers everything: economic definitions of scarcity, Adam Smith, Arthur Cecil Pigou, Vilfredo Pareto, welfare economics, external effects, transaction cost, regulatory failures, efficiency, but also non-economic goals. Chapter 4, I presume, cannot be topped. Unless, of course, you refute the naturalistic (or essentialist) definition of scarcity. Professor Needham’s Chapter 4 is based on a naturalistic (or essentialist) definition of scarcity: ‘Scarcity ...

means that there is less of something than we want’ (Needham 2006: 52–53). But in which way do we *want* land? Who is the subject of want and need, this greedy, yet faceless *we*? Does time influence scarcity because it matters *when* we want something? And *why* is it that we want something? Surely there is no simple answer to these questions. Mainstream economists seem to agree that scarcity is a fact they presuppose, but do not examine. In this sense, the preferences of consumers and producers are off-limits. Left to public choice theorists, psychologists, and the advertising industry for too long, preferences and scarcity deserve new attention (Mullainathan & Shafir 2013). This new attention would be helpful to planning, law, and property rights. Obviously, planning, property, and land policy greatly depend on the understanding of *land*, as the result of a huge variety of social constructions of land, of the ways in which we want land, and of how land can be abundant or scarce.

Figure 1 is a critique of the economists’ prevalent notion that scarcity ‘means that there is less of something than we want’ (Needham 2006: 52–53). The gentleman, who satisfies his urgent need in public view fails to recognize the row of portable toilets as a possibility of a more modest needs satisfaction. The situation in Figure 1 is about an urgent feeling of scarcity in the face of abundance. We all have urgent needs, but do we have the *right* to satisfy our needs? The gentleman does not feel entitled to using one of the portable toilets which have been put up in preparation of a marathon around Lake Phoenix in Dortmund-Hörde. Figure 1 tells us that scarcity has a lot to do with social blindness that reaches far beyond the notion of ‘less of something than we want’ (Needham 2006: 53) into the realm of rights and functionalities. Scarcity is about perceptions and entitlements. To a real estate tycoon, land is not scarce in the same way as it is for a young Muslim male, who the Israeli police prevents from attending Friday prayers in *al-masdschid al-aqsa* in East Jerusalem. To a devoted environmentalist, who protects a wetland from a highway proposal, land is scarce, but not in the same way as it is scarce for a planning authority which seeks locations for 10,000 housing units direly needed for asylum seekers. From the perspective of planning and property, the economic rationale of scarcity is fundamentally naive. Everybody knows that land has different meanings for different persons. These differences result from the vast variety of ways in which stakeholders appreciate land and its values. Stakeholders, who ‘want’ scarce land, express their desire though their appreciation of the values of land. No monorational concept of value or scarcity can satisfy the curiosity of planners and other policymakers. Yet, how can we grasp the variety of land values, scarcity, and abundance?

Polyrational land values occur not occasionally, but frequently (B. Davy 2012). Polyrational land values—and this also means polyrational perceptions of scarcity—do not merely pertain to different locations, for example, a pleasant mountainside which illustrates the existence value of land, or a boundary fence which illustrates the territorial value of land. Polyrational land values pertain to the very same location. Rashmi Bansal and Deepak Gandhi start their 2012 book *Poor little rich slum* with a description of the many meanings and values that Dharavi, the world-famous informal settlement in Mumbai, has for different persons:



Fig. 1. We all have urgent needs. But do we have a right to satisfy our needs?
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'To the residents of Dharavi, it is a way of life. They live here, work here, marry here and even die here. What's the big deal anyway? ... The resident of Dharavi is blind to the inconvenience of living in a place where one toilet is shared by 1,440 residents. Because he knows no other world. ... To the residents of high-rise buildings in Mumbai—a small but important slice of people—Dharavi is "Asia's largest slum". A filthy place you see through a car, with windows rolled up tight. ... The high-rise resident is blind to the community and kinship of Dharavi. ... To the businessmen who operate in Dharavi, it is a convenience. Cheap labour and cheap rent make it a mega-hub of micro-enterprise. \$650 million is the sum total of Dharavi's annual turnover. ... The businessman is blind to the toll of human life. ... To the builder who proposes to redevelop Dharavi, it is a goldmine. 1.7 sq km in the heart of the city ... The builder is blind to the human beings who 'occupy' this prime property. All he can see are the zeros people will pay for fancy new apartments. ... To the government, who "owns" Dharavi, it is a time-bomb. ... To the outsiders who come to Dharavi, it is a project. ... The outsider chooses to see a colourful, chaotic, creatively inspirational mess' (Bansal & Gandhi 2012: 6–7).

Bansal and Gandhi (2012) mention stakeholders, who appre-

ciate land and its scarcity in fundamentally different ways. The slum residents value the social capital accumulated through successful exchanges with their neighbours. They measure scarcity in a lack of social relations. The residents of high-rise buildings in Mumbai value the pristine and well-ordered atmosphere of apartment houses. They measure scarcity as the presence of unruly and possibly illegal land uses. The businessmen and builders expect healthy rewards from their managing the exchange value of land. Scarcity means rental protection and health and safety regulations for the businessmen and obstacles to slum clearing for builders. The government mostly appreciates the territorial value of land that can be moulded into a new city, once all opposing forces have been eliminated. The outsider, however, mostly values the existence value. A slum is valuable because it exists, and for tourists, scarcity is a lack of photo opportunities and heart-warming stories about slum life. Tourists hope to take 'slum selfies' which, once uploaded to Facebook or Instagram, will be liked by many digital friends.

One way to understand polyrational social constructions is to bring to mind the monorational concepts of land value that contribute to robust social constructions of scarcity. Although everybody knows that land means different things to

different persons, no one can claim what the 'true' meaning of land value or scarcity is. As a consequence, a theory of polyrationality must start with an account of possible types of land values (B. Davy 2012) without ranking one type of land value or scarcity higher than another. The map in Figure 2 is based on Mary Douglas grid-group theory or cultural theory. In grid-group theory, 'grid' indicates the acceptance of or defiance to external determination and 'group' indicates the proximity to or distance from a collective (Douglas & Ney 1998). The map in Figure 2 includes four types of land values: exchange value, use value, territorial value, and existence value (B. Davy 2012). Each of the monorational values corresponds to a particular type of land and of scarcity. Although

the map is not complete, it is fairly comprehensive. Surely, the map in Figure 2 is more substantial than simply saying that scarcity means 'that there is less of something that we want' (Needham 2006: 52–53).

The notion of several types of values is not quite as unfamiliar as many economists seem to believe. Adam Smith inaugurated modern economics with a riddle. The paradox of values puts use value and exchange value into contrast:

'The word value, it is to be observed, has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys. The one

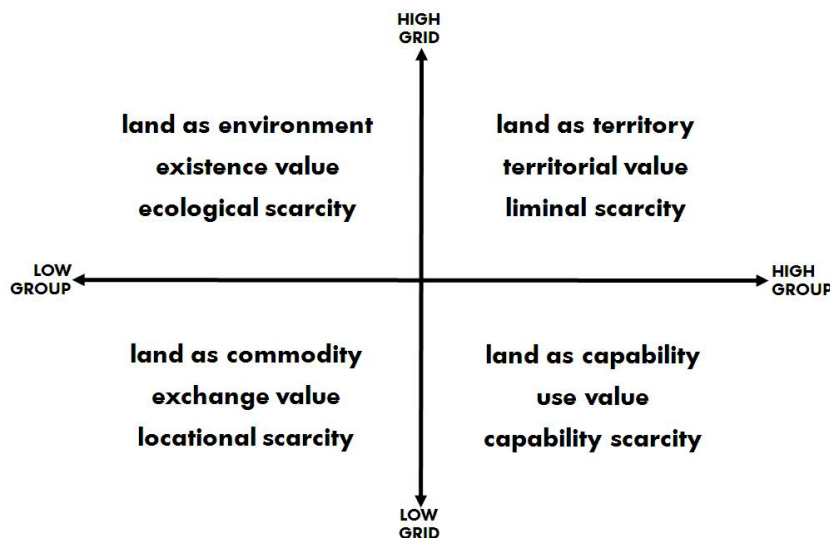


Fig. 2. A playful map of land, value, and scarcity

may be called "value in use;" the other, "value in exchange" (Smith 1776: 34, Book 1, Chapter 4).

An object may be useful or useless, and it may be expensive or cheap. Utility and price emphasize different aspects of an object. A paradox emerges as soon as one type of value appears to be the opposite of the other:

'The things which have the greatest value in use have frequently little or no value in exchange; and, on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce a thing; scarce any thing can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it' (Smith 1776: 34–35, Book 1, Chapter 4).

The paradox of values has inspired great minds. The paradox probably does not exist. Computers or refrigerators are not like diamonds; they have a high use value and they are expensive. The paradox of values is still interesting because it reminds planners and other policymakers of a variety of social constructions of land values, scarcity, and abundance. In the remainder of this article, I shall explain the elements of polyrationality presented map in Figure 2.

Exchange value of land

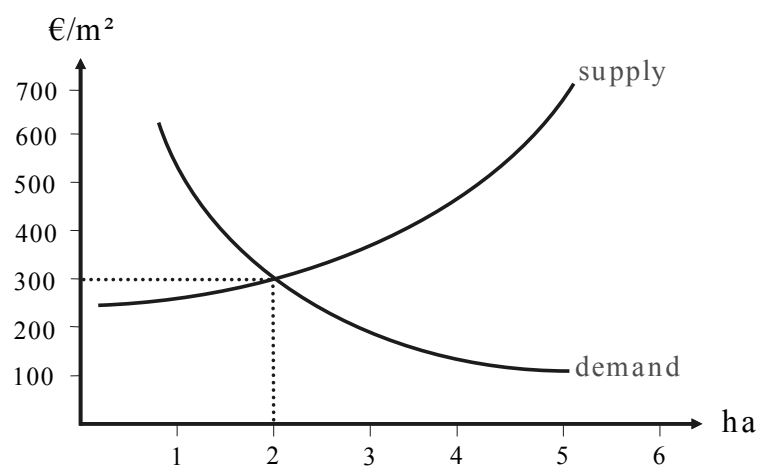
The exchange value of land regards land as commodity, as a good that is bought and sold (B. Davy 2012: 95–96). The exchange value of a good equals its market price. Speaking about the exchange value of land, we use words like real estate or commercial property. Such words, however, do not explain the exchange value of land. In a neoclassical economic model, the equilibrium price derives from demand and supply. In Figure 3, the supply curve and the demand curve illustrate how potential sellers and buyers react to an increase or decrease of the price of land. If the price increases, more owners are willing to sell their land, and the supply increases. The demand for land, however, diminishes with each price increase. Fewer potential buyers are willing to enter a market with increasing prices. A decrease of land prices has the opposite effect. Lower prices stimulate the demand for and reduce the supply of land.

In Figure 3, potential buyers demand 3 hectares of land at a price of about 200 €/m². At this price, landowners offer less than 1 hectare of land; they would supply 3 hectares of land only at a price of around 400 €/m². If neither buyers nor sellers monopolize the market, no individual has the power to impose a price or to dictate which amount of land must be

supplied. Instead, potential buyers and sellers enter into a bargaining process. After a while, the bargaining process establishes an equilibrium between supply and demand. At a price of 300 €/m² the amount of 2 hectares of land is bought and sold. 300 €/m² is the equilibrium price in Figure 3. The demand curve reflects the marginal utility that land has for potential buyers. The supply curve reflects the costs of converting land into an asset, yet also the preferences and property rights of the present landowners. Neoclassical economics ascertains that an unhampered market, at the equilibrium price, considers the demand of potential buyers and the supply of potential owners in a way that best satisfies collective preferences. Some potential buyers (or potential sellers) still leave the market unsatisfied. The equilibrium price of 300 €/m² is too high or too low for them.

In the neoclassical model, the exchange value reflects the relationship between the supply of and the demand for a good. The good is 'scarce' with regard to the existing supply (plus a potential for future production) and present demand (plus expected increases and decreases). In fact, this model

is too simple to illustrate how land economics and property valuation employ various price theories (Isaac 2002: 57–68; O'Flaherty 2005: 117–118; Ray 1998: 420–444; van Kooten 1993: 43). The appraisal of the market value of land needs to factor in the ways in which market actors appreciate land. The market value of single-family houses, in an economy where such houses are predominantly owner-occupied, is determined by production costs. The depreciated replacement cost method uses classical price theory (and there is hardly a place for scarcity in classical economics). The sales comparison method uses neoclassical price theory: The price of building land frequently equals the average of market transactions resulting from an exchange between supply and demand. The standardized land values (Section 196 BauGB), published by land valuation boards in Germany, reflect average sales prices of land in a certain location (scarcity corresponds with the relationship between demand and supply). With commercial properties, however, revenue capitalization helps determine the market value. The exchange value of land as investment takes into account the land's capacity to store and produce wealth. Buyers of commercial properties



Source: B. Davy 2012: 96; adopted from Krugman & Wells 2006: 69.

Fig. 3. The neoclassical model of an equilibrium land price

consider their purchase as an investment decision (scarcity expresses the expectations of the landowner to receive a regular revenue from using or leasing out a piece of land).

Planners and other policymakers interested in the exchange value of land try to modify locational scarcity. Land considered as commodity is valuable, as realtors are fond of saying, because of its 'location, location, location.' In this sense, location is a bundle of positional and relational features of a plot of land. Some of these features are difficult to modify, e.g., the positional feature 'located in a metropolis' or 'located in a rural village.' Other features are easier to modify, such as 'located far away from a school' (planners can change this feature, if they deem fit, by siting a school in the proximity of the plot of land in question). Locational scarcity measures the

quantity and quality of the positional and relational features of a plot of land as far as they are appreciated by the buyers and sellers in the land market (including owner-occupiers, developers, investors). Ideally, the sales comparison method can be used to reflect the overall appreciation of 'location.' It would be a mistake, however, to reduce locational scarcity and exchange values to imaginations of 'brutal' land market rationality. Locational features, in fact, are multi-dimensional and encompass many aspects which are also relevant for the use value, the territorial value, and the environmental value of land. Building land that is located, for example, in a pristine environment (at a lake or close to a forest or a public park) often yields a higher price than similarly located building land without any environmental amenities.

Use value of land

The use value of land expresses the utility of land—may it be urban or rural, commercial or owner-occupied, private or public—gained through the uses of land (B. Davy 2012: 102–104 and 109–113). Smith's paradox of values (> p. 135–136) reminds us to the fact that land has a use value, not only an exchange value. The use value of land relates to the fundamental capabilities that occupiers achieve by using the land:

'The use of a certain area of the earth's surface is a primary condition of anything that man can do; it gives him room for his own actions, with the enjoyment of the heat and the light, the air and the rain which nature assigns to that area; and it determines the distance from, and in great measures his relations to, other things and other persons' (Marshall 1890: 120–121).

An important step in understanding use values was utilitarianism. Bentham (1789: 1) ascertains that 'nature has placed mankind under the governance of two sovereign masters, pain and pleasure.' Utilitarians draw from this governance of pain and pleasure the principle of utility: 'By the principle of utility is meant that principle which approves or disapproves of every action whatsoever, according to the tendency which it appears to have ... to promote or to oppose ... happiness' (Bentham 1789: 1). The use value of an object reflects the degree of benefit, pleasure, or happiness associated with its use: 'The use of a thing, in political economy, means its capacity to satisfy a desire or serve a purpose.' (Mill 1848: 437). The 'capacity to satisfy a desire' can be framed in terms of scarcity or abundance. Sometimes is the capacity to avoid harm, pain, or loss. In this vein, using land as site for a house creates happiness. Using land as retention area for a river prone to flooding avoids harm. The utility principle does not distinguish between the two cases, because the capacity to avoid harm can also be construed as the capacity to satisfy the desire for security. In so far, the 'two sovereign masters, pain and pleasure' (Bentham), are only one, and welfare economists refer to 'utility.'

The use value of land grows from the preferences of its users. Depending on their needs and desires, people may use the same parcel of land for various purposes and in different ways. David Harvey considers the incommensurability of use values, but also suggests some firm ground determining use values:

'Use values reflect a mix of social needs and requirements, personal idiosyncrasies, cultural habits, life-style habits, and the like, which is not to say that they are arbitrarily established through "pure" consumer sovereignty. But use values are basically formed with respect to what might be called the "life support system" of the individual' (Harvey 1973: 160).

Harvey (1973: 158) ascertains that land and improvements are 'commodities which no individual can do without.' His phrase of the use value of land as 'the 'life support system' of the individual' considers land values independently from market transactions and capitalist modes of production.

Martha Nussbaum and Amartya Sen have developed a theoretical framework for a qualified examination of the quality of life (Nussbaum & Sen 1993): 'The capability approach

to a person's advantage is concerned with evaluating it in terms of his or her actual ability to achieve various valuable functionings as a part of living' (Sen 1993: 30). According to Nussbaum (2006: 70), human capabilities are 'what people are actually able to do and to be, in a way informed by an intuitive idea of a life that is worthy of the dignity of the human being.' To Sen, such capabilities depend on achieving certain functionings:

'The well-being of a person can be seen in terms of the quality (the "wellness" as it were) of the person's being. Living may be seen as consisting of a set of interrelated "functionings", consisting of beings and doings. ... Capability is primarily a reflection of the freedom to achieve valuable functionings' (Sen 1992: 39 and 49).

The capabilities approach is useful for analysis and design (Nussbaum 2011). With respect to land uses, it turns our attention to the access of every individual to minimal land uses. By taking the capabilities approach, land use planners and other makers of land policy can enable each individual to achieve a modicum of land-related functionings. Scarcity expresses how many individuals receive how much of this modicum of land-related functionings. The human rights approach to global social citizenship (U. Davy 2014) is one way to frame functionality scarcity. Land that is used for the development of central capabilities has a higher use value than land that is not used for this purpose at all or only at a lesser degree. A parcel of land with a large, detached single-family house and a pond set in marble and inhabited by pink flamingos certainly enables its owners to find shelter, to play, and to hold property. But at the same time, the size and quality of this property exceeds the limits of what a person requires with consideration of her central capabilities. A parcel of land with an apartment building for social housing, on the other hand, has a high use value because an apartment house accounts for central capabilities of many families. The parcel of land with the single-family house has a smaller use value because it also comprises many uses which do not address central capabilities.

Planners and other policymakers interested in use values consider capabilities scarcity. To them, a city map is the cartographic representation of opportunities to use land for central capabilities. From the perspective of use value, planning is an effort to secure a minimum of capabilities for everybody and to manage land use conflicts. Planning in the face of capabilities scarcity often involves spatial goods and services with a low or no exchange value. Public streets and public parks rarely are a source of revenues. It is important, nevertheless, that each city has a sufficient amount of public streets and public parks. Without these and other spatial commons with a high use value (and low or no exchange value), capabilities scarcity would become unbearable. Even if a city is very wealthy, without sufficient use values of land it is utterly dysfunctional.

Territorial value of land

The territorial value of land reflects the power bestowed on the landowner by exercising exclusive rights over a piece of land. In order to be owned, land has to be commodified and it has to be sufficiently clear where a plot of land starts and

where it stops. The commodification of land through land law is based upon a system of land survey and land registration. Commodification and territoriality are not facts of nature. Smith's paradox of values applies to land, but not due to its natural condition. Regarding land uses, the paradox of values occurs because of the particular social construction of private and common property, or of the shared and restricted uses of land. Literally, commodification means to turn something into a good, a commodity. Policymakers commodify land, among other things, through land law and land use planning. If policymakers privatize a public park by changing the rules for using it (Needham 2006), they have turned, to borrow from Adam Smith, water into diamonds.

Spatial power scarcity emphasizes that land and other natural resources are not naturally scarce, yet access is limited through legal or extra-legal powers. In a 1913 treatise on the social question and socialism, Franz Oppenheimer, a German sociologist, asserted that the land monopoly is entirely artificial, not natural. He called private property's impact on land uses *die Bodensperre* (Oppenheimer 1995: 631–643), literally the land barrier. Property institutions rather than resource scarcity, he asserted, exclude most people from owning land. The entitlement approach applies a rather similar idea to explain the relationship between poverty and famines (Sen & Drèze 1999: 45–51). Scarcity created through rights is a powerful instrument to influence the distribution of benefits and burdens. A lack of access rights, not natural scarcity results in food insecurity (Bowring 2003; Frost 2000; Hossain & Kalita 2014; Lee 1975; Moosvi 1985; Scanlan et al. 2010). In a similar vein, international conflicts and geopolitical unrest often indicate territorial scarcity. Resource wars result from unclear or contested boundaries and environmental scarcity (Gaan 2001; Hauge & Ellingsen 1998; Maxwell & Reuveny 2000; Percival & Homer-Dixon 1996, 1998; Stalley 2003). Spatial power scarcity does not so much depend on the exchange value of land or the land markets, but on land rights and territorial spheres of influence.

The territorial value of land expresses the spatial powers rendered to the territorial sovereign or proprietor. Territorial values relate to geopolitics and boundaries, not to capitalized net revenues. The Latin word *terra* means land and initially referred to the land dominated by a monastery, a castle, a city. But territoriality is limited neither to international nor to formal territoriality. A formal landowner ascertains territorial values by putting up a fence or locking her doors. A street vendor expects other informal land users to respect his 'right' to sell vegetables at a certain corner.

Everybody, who claims space, as an expression of their spatial powers, asserts territorial values. The exchange value and use value of land emerge as a result of formal or informal institutions which approve of the possible and profitable uses of the land. Without a land right, there is no land value. Joan Robinson asserts that 'the right to exploit territory is the archetypal form of property. The whole structure of a society is affected by the rules of the game in respect to land tenure and inheritance' (Robinson 1965: 283). The economic analysis of law often calls the 'rules of the game'—institutions governing land uses—property rights (Bouckaert & Geest 2000; Veljanovski 2007). Confusingly, lawyers and economists use the term property with different, yet overlapping meanings.

From an economic perspective, property is 'a benefit stream that individuals (or a group of individuals) hope to be able to capture and control in the future' (Bromley 2006: 56; also Bromley 1991: 2). Common or codified private law can be the source of the benefit stream, but also planning law, public services, or local customs. For a lawyer, property is a legal right that guarantees the undisturbed restricted or shared use of the land (Penner 1997: 187). Of course, the two views have an overlap. Land cannot be used productively unless landowners enjoy legal protection. Landowners have to be able to trust that their rights—their power to exploit territory—are fully recognized. Potential buyers want to have a legitimate expectation that, by paying the price demanded by the owner, they will purchase not so much a piece of land, but a right that is protected effectively by formal or informal remedies. Also, the legal protection of property creates incentives to use resources efficiently (Posner 2007: 32).

The scarcity of land, regarded from the perspective of its territorial value, relates to the liminal functions of the land's boundaries. Whether or not a piece of land has territorial value depends on whether the affected stakeholders benefit from liminal functionality. Each boundary has to fulfill three functions: division, separation, and connection (B. Davy 2012: 122–124). Borderlands are a good example to study the relationship between space and people (Haselsberger 2014). Many borderlands between two or more countries are equipped with an elaborate system of boundaries which simultaneously divides, separates, and connects. Political boundaries draw from the idea of a clear *separation* of territorial sovereignty. Countries may have chosen a river or mountain ridge as 'natural' border between them, assuming that rivers and mountains are reliable separators. However, floods, migrating animals, or weather have little respect for separation and use the border as connection. The survival of many countries, in fact, relies on the simple truth that nature knows no borders. Nature is full of *connections*. And this is important for a functioning boundary system: Otherwise, downstream countries would be without water, or downwind countries without air. Borderlands use boundaries also to establish a *division* between uses: Economically valuable land uses become thinner close to the border, but the allegedly empty land is home to biodiversity. The division of land uses sometimes results in the siting of hazardous or unpleasant facilities (e.g., nuclear power plant, waste incinerator, refugee camp) close to the border. A country that permits the siting of locally unwanted land uses (LULUs) close to its borders does not wish to separate the site from its territory; it merely wishes a division of land uses conducive to political tranquility within its territory.

Assume that even one of the three functions is missing. If the unwanted land use—magically, let us say—is shifted towards the capital, the government cannot separate the uses of space the way it prefers. If no separating borders exist, the government cannot control who enters or exists the territory. If nobody can pass the border, the country will suffer from a lack of trade. Division, separation, and connection are essential functions of each boundary system. A borderland that everybody can enter, that cannot be used for different purposes, or that cannot be accessed or left, suffers from unsuitable boundaries, it is liminally dysfunctional. Liminal functiona-



Fig. 4. Informal fruit vendor, claiming space, checks WhatsApp messages (Bengaluru, Karnataka, India) © 2015 Benjamin Davy

lity depends on satisfaction. A boundary is liminally functional, if according to all concerned parties, the social practices of boundary making establish a satisfying level of division, separation, and connection (B. Davy 2012: 124). The three boundary functions, although varying in degree, have to be performed simultaneously.

- *Division:* A boundary, by dividing up a whole into parts, organizes the relationship between the whole and its parts. It also distinguishes between the parts. Dividing boundaries define the inside.
- *Separation:* A boundary, by separating a defined object from the rest of the world, creates a difference. Separation emphasizes this difference and permits inclusion as well as exclusion. Separating boundaries define the outside.
- *Connection:* A boundary, by connecting the separated objects, admits transition and crossing over. The connection highlights the similarities between the separated objects. Connecting boundaries define proximity.

Liminal dysfunctionality can be used to measure liminal scarcity. Borders help to manage scarcity. Liminal scarcity (or territorial scarcity or spatial power scarcity) measures the

success of boundary regimes. Liminal scarcity results from too much or too little performance from each of the three liminal functions. As a result, the stakeholders suffer from powerlessness. Planning and land policy permanently establish, modify, or abandon boundaries. Most of the time, these boundaries are not international or even political boundaries. Yet, planning and land policy interfere with economic, legal, social, cultural, or environmental boundaries. Planners and other policymakers can perform as boundary makers only if they are familiar with liminal functionality and understand territorial scarcity.

Existence value of land

In the worlds of exchange values and use values, land without use has no value, but is just wilderness. Perhaps wilderness is waiting for an increase in land rent and to be converted into useful land, but perhaps it will remain a barren borderland. The perception of the value of the environmental quality of land changed with the experience of industrial pollution and overcrowded cities. Why can a city not be like a beautiful park or garden? In fact, Howard's concept (1898), although mostly concerned with land rent, municipal finance, and population control is still popular because of its

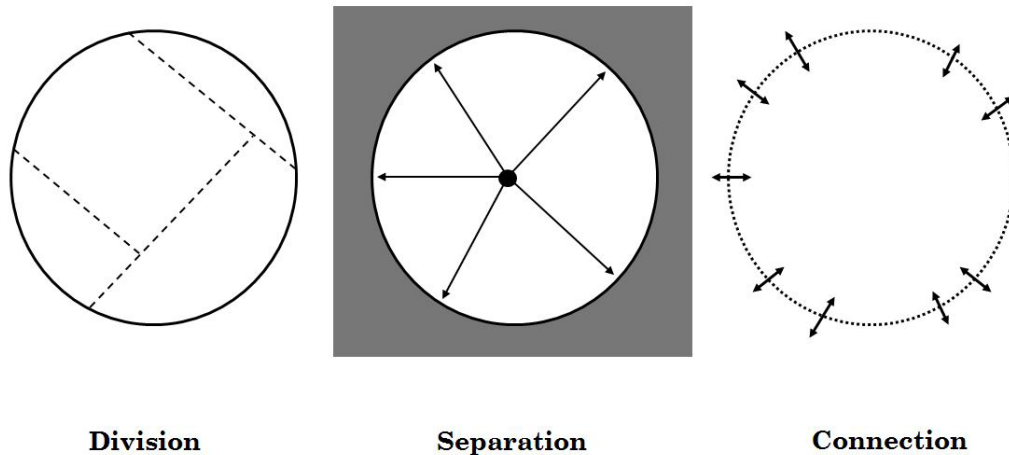


Fig. 5. Boundary functions (adopted from B. Davy 2012: 123)

charismatic label 'Garden City.' Neoclassical economics either ignores environmental quality or conceives of the loss of natural resources as an economic loss. According to Alfred Marshall (1890: 548), the conversion of open urban spaces into building land is 'a great blunder from a business point of view.' Environmental quality influences exchange value, use value, and territorial value. Market values relate to environmental quality in many ways. The proximity to public parks, air pollution, noise, scenic beauty, or the probability of natural disasters affect the market value. Often the influence is ambiguous. If a property in a floodplain is put on the market, potential buyers consider the attractive proximity of a river, but also the likelihood of flooding (Hartmann 2011).

Valuing nature veers between 'cents and sensibility' (Fourcade 2011). Environmental quality is a fuzzy concept that combines natural science and hard facts with vague perceptions and sentimental interpretations of nature. Perhaps land has value simply because it is here. Such value derives from the environmental quality of the land more than it does from its exchange value, use value, or territorial value. The technical term for environmental values that do not depend on market transactions, human uses, or spatial power is existence value (B. Davy 2012: 131–135). The existence value is 'the value of an object in the natural world apart from any use of it by humans' (Aldred 1997: 155). The existence value of land is a kind of ecological land rent. Economists consider the land rent a surplus income of the landowner independent from labor or capital investment. The existence value of land also is a surplus benefit that depends on the mere existence of land apart from any exchanges, uses, or power relations. The existence value, however, does not exclusively add to the landowner's wealth, it spills over into the general welfare. The existence value of land—natural beauty or biodiversity—is a positive externality with few opportunities to internalization. Also, the ecological land rent can be negative. If the use of land does not yield a land rent, or its costs even exceed the benefit, the owner ceases the unprofitable land use. But if the ecological land rent turns negative, the existence of the land—including the climate, vegetation, animals, human dwellers—is threatened. The market value of contaminated land is nil, yet its negative existence value encumbers present and future

generations.

A Sand County Almanac is an early, yet compelling attempt to capture the notion of existence value. Aldo Leopold draws the land ethic from his broad understanding of community:

'The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land. ... A land ethic of course cannot prevent the alteration, management, and use of these "resources," but it does affirm their right to continued existence in a natural state. In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such' (Leopold 1949: 239–240).

Leopold considers existence value, without mentioning the term, as respect for the land-community 'as such.' The land ethic has a utilitarian streak, however, because it doubts that humans can subdue the environment:

'In human history, we have learned (I hope) that the conqueror role is eventually self-defeating. Why? Because it is implicit in such a role that the conqueror knows, *ex cathedra*, just what makes the community clock tick, and just what and who is valuable, and what and who is worthless, in community life. It always turns out that he knows neither, and this is why his conquests eventually defeat themselves' (Leopold 1949: 240).

Governance based on a notion of monorational superiority is useless. But do we need to feel equal with soils, waters, plants, and animals in order to become respectful members of the land-community? Environmental values are hugely contested (O'Neill et al. 2008). Leopold (1949: 253) claims that land 'is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals.' Deploping the ecological consequences of urban growth in the United States, he demands that policymakers look beyond the economic value of land:

'It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean so-

mething far broader than mere economic value; I mean value in the philosophical sense' (Leopold 1949: 261).

Environmental values enter policymaking at different levels. Most famously, the Club of Rome report *Limits to Growth* has alerted policymakers to the connection between economic growth, environmental degradation, and resource scarcity (Meadows et al. 1972). Often denounced as Malthusian revenant, political ecology and environmental economics have achieved a lasting effect on planners and other policymakers. Scarcity of land and other natural resources is a centerpiece of what has been called 'fundamentalist ecology' (Shantz 2003). Environmental economics examines the value that should be assigned to land and other natural resources in cost-benefit-analysis and similar decision making tools (Bromley 1995: 543–686; Common & Stagl 2005: 125–166; Fourcade 2011; O'Neill et al. 2008: 49–69; Tietenberg 2006: 14–61). Land policy, based upon a land ethic, considers the protection and promotion of environmental values (Beatley 1994; Caldwell & Shrader-Frechette 1993; Geisler & Daneker 2000). Moreover, environmental values are relevant to agenda setting. Labels like environmental justice, sustainable development, or global warming have powerful effects on policymaking. The ecological scarcity of land and other natural resources refers to environmental quality that does not serve any other purpose but the mere existence of natural resources. Nevertheless, as has been emphasized in the case of water scarcity, environmental scarcity is often related to the use value, territorial value, and exchange value of land (Alatout 2008; Kim 2008; Phadke 2002; Phansalkar 2007; Selby & Hoffmann 2012).

Planning and the scarcities of land

The four social constructions of land values and scarcity (Figure 2) sometimes overlap: An easement, giving the owner of a locked property the access to a public street, enhances the territorial values ('More rights!') as well as the exchange value ('Location renders more revenue!') of the land. The four social constructions of scarcity, however, are fundamentally different from each other. A scarcity of spatial commons such as public streets or public parks cannot be expressed in exchange values of streets and parks (but rather in the dissatisfaction of users). Accordingly, planners cannot manage scarcity easily, and certainly not through a simple trade-off between different types of land values.

This paper has three beginnings (and, in a sense, offers three lessons):

- The first beginning is a quote from Joni Mitchell's 1991 song *Windfall*: 'You want too much. You want too badly. You want everything for nothing.' Having listened to her captivating song so many times, in many different moods, Joni's lyrics to me express the scarcity dilemma. Yes, we want happy consumers, but above all we want to increase our profit margins (this is the 'critical of capitalism' reading). Yes, we want a clean environment, but we don't want to give up our resource consuming practices (this is the mainstream 'green economy' reading). Yes,

we want to help refugees, but we don't want our cities and society to change (this is the 2015 German reading). Lesson: It's not enough to understand that we want more than is available; it is essential to examine *what* we want, *why* we want it, *when* we want it, and *who* is we.

- The second beginning is an observation about recent literature on planning, law, and property rights. Although I am respectful of all editors and authors, who study new planning instruments, I am suspicious of looking at *tools* (Hartmann & Needham 2012; Janssen-Jansen, Spaans, & van der Veen 2008; Leshinsky & Legacy 2016) while neglecting the multitude of the meanings of land, land values, and scarcity. Take, for example, the German example of the rift between goals and instruments in densification (*Nachverdichtung*) or internal development (*Innenentwicklung*). Land readjustment is a well-established tool that helps establish property boundaries conducive to the implementation of binding land use plans (B. Davy 2012: 6–8). This is, technically speaking, also true for land use plans that demand a higher density: Land readjustment can be employed to turn vast backyard gardens into build-ing land (increasing substantially the exchange value of land used for backyard gardens). Densification or internal development, however, lowers the territorial value of land and reduces the spatial powers of landowners, who enjoyed their backyards until new neighbors (and their effervescent kids) occupied the re-adjusted plots of land. The mounting opposition against land readjustment as a tool of densification in Germany cannot be explained in terms of exchange values, yet it is very plausible in terms of territorial value and locational scarcity. Lesson: Scarcity is about the goals, not the instruments of planning.
- This paper's third beginning looks at the emergence of the idea of private property in land, commencing in the 17th century, in the face of plural perceptions of scarcity. The notion of scarcity of land played a significant part in developing institutions of private property. The abundance of land makes private property convenient, as suggested by Locke, or the scarcity of land makes private property a necessity, as asserted by Blackstone. Lesson: If you want something, dude, scarcity is always a great argument (for whatever).

The theory of polyrationality (B. Davy 2012) juxtaposes monorational notions of land, land values, or scarcity with a consideration of other voices, other rationalities (Figure 2). With respect to the scarcity of land, planners and other policymakers have a variety of goals in their minds and influence land values and scarcity in different ways. Such interventions can have a great impact on the distribution of benefits and burdens, as demonstrated by the concept of *Bodensperre* (Oppenheimer 1995: 631–643), the entrenched distribution of the benefits of land uses in favor of the landowners. Planners and other policymakers constantly influence and modify the plural values of land. Often they do this through the social reconstruction of scarcity. The theory of polyrationality does not suggest that social meanings and social constructions be pulled out of thin air. Social meanings and social constructions often have a very solid basis in facts. The theory of polyrationality claims, however, that mere facts obtain their

meaning through cultural interpretations: ‘Cultures incorporate their implicit agendas by framing selected issues, setting agendas, labeling, and foregrounding, backgrounding, and fading out’ (Douglas & Ney 1998: 124). Territoriality is a good example of the social construction of land and its value. In Germany, the Nazi government deplored a *Volk ohne Raum* (people without land) when population density was about 140 people/km² (1938). Adolf Hitler promised the *Bodenpolitik der Zukunft*, the land policy of the future, and—in the name of the German people—extorted land in Eastern Europe. More than 70 years later, and at a much higher population density of about 230 people/km², the federal government of the reunified Germany bemoans the cities in Eastern Germany or in post-industrial regions as ‘shrinking cities’ or ‘shrinking regions’ (B. Davy 2012: 125–126). The power to define spaces as overflowing or critically empty is augmenting the government’s or owner’s power to determine the value of spatial purposes:

‘Territoriality in fact helps create the idea of a socially emptiable place. Take the parcel of vacant land in the city. It is describable as an empty lot, though it is not physically empty for there may be grass and soil on it. It is emptiable because it is devoid of socially or economically artifacts or things that were intended to be controlled’ (Sack 1986: 33–34).

Re-defining density and scarcity of land is a prevalent activity of planners who deal with scarcity. In most countries and cities, however, land is abundant. Planners and other policymakers still like to point to Venice and Manhattan, *Palm Jumeirah* in Dubai or the fragility of Dutch land to illustrate that land is finite. What is scarce, is building land, i.e., land with the highest exchange value. To deplore the scarcity of building land as a natural scarcity of land is a manipulation of public perception. This manipulation has a purpose. It is supposed to instill a feeling of urgency in the heart of citizens, who will never benefit from an increase of building land, although they very well might resist to the further destruction of natural resources and the existence value of land. Planners play a significant role in this version of the scarcity game. Designating undeveloped land as building land reduces the scarcity of land. Economically speaking, this increases the exchange value of the land prepared for conversion, but possibly decreases the exchange value of the entire supply of building land. Planners may have good reasons to speed up land conversion. Merely listening to the voice of ‘scarcity,’ however, turns planners into instruments of capital accumulation.

Not the physical space in itself, but its social construction results in assertions of abundance or poverty, urgency or tranquility, distress or relief, terra nullius or fully appropriated land. Although economics usually avoids reflections on the social constructions of scarcity, Paul Samuelson’s concept of ‘contrived scarcity’ touches upon the power of certain economic actors to influence the effects of scarcity:

‘If you own the best site for a bridge, then you must be careful not to sell anyone else the lot next to it; otherwise, he will be able to offer the bridge builders a site nearly as good as yours, and this will limit the dollars you can derive from yours. Thus, part of the rent you earn on Nature’s bridge site has a monopoly element in it by virtue of your withholding

its use for fear of spoiling your dollar market’ (Samuelson 1976: 625).

Samuelson is one of the few economists who admit that ‘scarcity’ can be manipulated for increasing personal profit:

‘Under imperfect competition, it pays people to limit the supply of their factors somewhat. By definition, natural scarcities are such that nothing can be done about them. But under imperfect competition, we encounter in addition so-called “contrived scarcities”’ (Samuelson 1976: 625).

Samuelson’s distinction between ‘natural scarcities’ and ‘contrived scarcities’ fails to accept fully that *all* scarcities are ‘contrived,’ or in other words: socially constructed. Talking about climate change, the flow of refugees, real estate bubbles, or inner city decline, all speakers try to impress *their* social construction of scarcity—urgency, rarity, abundance, poverty, need, market failure, bad governance—on their audience. Calling the interpretation of facts and the creation of social meaning a ‘social construction’ does by no means imply mere propaganda or manipulation. Although propaganda as well as manipulation distort—through social constructions—the perceptions of the public, social constructions very often are without ill will or wicked intentions. By ‘selecting issues’ (Douglas & Ney 1998: 124), a monorational bias determines what will be construed of as a problem or a solution. Monorational concepts of scarcity perform like Georg Simmel’s ‘condom’ (B. Davy 2008). Monorational concept of scarcity determine the efficiency as well as the ‘tunnel’ of dealing with scarcity:

‘Scarcity alters how we look at things; it makes us choose differently. This creates benefits: we are more effective in the moment. But it also comes at a cost: our singled-mindedness leads us to neglect things we actually value’ (Mullainathan & Shafir 2013: 38).

Scarcity influences values by removing everything from a decision maker’s mind that is not necessary to deal with ‘now’ and ‘not enough’ (Shah, Shafir, & Mullainathan 2015). Social constructions of scarcity create the sense of urgency and insufficient resources which supports a selected, often monorational value. In the case of spatial planning and land policy, the selection affects which land value is considered or neglected. Polyrationality scarcity management requires that planners be critically aware of plural land values. Considering polyrationality land values and plural constructions of scarcity or abundance, planners need to avoid the pitfalls of monorationality and plan ‘without a condom’ (B. Davy 2008). A greater variety of scarcities often will be confusing, but it also can ground planning much better than relying on one monorational standard only.

Polyrationality property more likely is a *credible* institution. But credibility must not be confused with sustainability, resilience, trust, collective rationality, environmental justice, or economic progress. According to the ‘credibility thesis’ (Ho 2014), no exogenous, overarching plan commands that property rights be developed in this or any other direction. Scarcity or social justice, environmental protection or economic efficiency (and other claims) merely would be labels concealing the emergence of—*in situ*, *inter partes*—claims to use, exploit, and (sometimes) overexploit the land. A constant

flow of various rationalities (Davy 2014) perhaps helps explain which contributions to disequilibrium are essential for the creation of (in)credible property. But that's another story.

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