6. TAKING SCARCITY FOR GRANTED

‘Scarcity seems to be the most unobserved starting point of modern society.’

6.1 Introduction

The previous chapter discussed the security aspect of the assemblage of energy and security. It provided a problematization of security by highlighting its inclusive and proliferating nature and by broadening the definition to one of identifying and dealing with undesired futures. A core undesired future in relation to energy security is, of course, a situation of scarcity. Of all the threats identified in Part I of this thesis, underneath them was the constant looming presence of a (potential) scarcity of energy. As the World Energy Council states: ‘[t]he scarcity of fossil fuel resources and lack of capacity to develop other resources define the vulnerability of Europe to potential energy crises.’ Arguably, scarcity is the glue in the energy and security assemblage, as it combines the physical natural resources, the economic markets and the security logics. This chapter takes a similar approach as the chapter on security and will first identify what scarcity is, and then slowly move on to discuss what it does. However, where the previous chapter primarily discussed fear, this chapter focusses on desire and makes three main arguments when problematizing scarcity and its use in energy security discourses. First, it breaks with a simplistic understanding of scarcity by identifying four different scarcity logics that together offer an alternative to security for the proliferation of energy security. In particularly, it builds on an understanding of relative scarcity and the subsequent relative desire that describes an unlimited social demand, including an unlimited demand for energy. Second, the latter sections of this chapter offer a strong problematization of both a geopolitical neorealist and a neoliberal free market reading of energy security. Third, the debates on scarcity highlight a line of thought that was visible in the earlier discussions on energy and food security by pointing towards neo-Malthusian, Ricardian and Distributionists modes of reasoning that radically disagree on core assumptions behind natural resources, technology and economic markets.

Unlike concepts as security, power or sovereignty, scarcity is not seen as an essentially contested concept in International Relations (IR) and International Political Economy (IPE) literature. Nor could it, as it is hardly commented on

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1 Achterhuis 1988, 12 [author’s translation].
2 WEC 2008, 85.
3 Without making any claims on the exact borders of the field of IR, and only by looking at ranking journals, the underlying problem of scarcity itself has so far received only limited attention. In fact, there is only one extensive discussion of scarcity in a special issue of the International Studies Quarterly from 1977. See Pirages 1977; with contributions from North 1977; and Orr 1977. For one of the few other individual contributions in IR, see Kemp 1978.
that is not to say that the term is not used a lot, only that scarcity is one of those facts of life that we seem to take-for-granted. It is precisely this “clarity” that is so remarkable, especially when one considers the (renewed) attention to scarce natural resources following recent events ranging from the food crisis in 2008, the Russian-Ukraine gas crises, the Chinese export restrictions on rare-earth metals in 2010 and tensions in the South Chinese Sea or the recent volatility of crude oil prices. Instead, within IR and IPE attention is often paid to individual resources, in particular energy, food, water and rare earth minerals. In addition, any attention that is paid to scarcity focusses on the relation between scarce natural resources and the international security and conflict dimension of these resources, including their institutional governance aspects and the consequences of environmental degradation. IR is not alone in this. Scarcity and scarce natural resources are discussed within a multitude of fields and disciplines. Be it economics (distribution), environmental studies (effects), geology (reserves), geopolitics (control), law (ownership), or more applied studies like logistics, agriculture and engineering (production and efficiency). In each of these fields, scarcity is taken as a starting point, as a problem that is in need of solutions, but hardly ever as a subject of study itself. This is remarkable as even a short glance reveals two inherent paradoxes and dilemmas in our dealings with scarcity and its counterpart abundance. First, the dialectical relationship between scarcity and abundance results in the situation where an abundance for person A often implies that person B is facing scarcity, which in turn is regularly perceived in terms of a security threat that leads to a security paradox. Second, many of the solutions offered for scarcity are not solving anything; they only shift (substitute) the problem to another time or another resource, making the latter scarce in the process – as if we are unable to genuinely overcome scarcity itself.

Instead of studying this inherent complexity, scarcity often is simply defined as a mismatch between limited supplies and unlimited demand. The Oxford English Dictionary, for example, defines scarcity as ‘[i]nsufficiency of supply; smallness of abundance.’

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6 A classical security paradox takes place when security measures taken by A lead to a downgrading of the overall perceived insecurity of B who feels threatened and responds in kind. The security paradox should not be confused with the security dilemma: the latter containing two levels of uncertainty on, firstly, the interpretation of motives, and, secondly, the response to be followed. It is only when the response leads to a downward (more insecure) spiral that we speak of a security paradox. See: Booth and Wheeler 2008, 5.
available quantity, number, or amount, in proportion to the need or demand.’ This broadly accepted basic definition of scarcity can be expanded upon, but remains based on this supply-demand interaction. For instance, North followed Aures & Stedman in defining scarcity as ‘a situation in which “future apparent demands exceeds future apparent supply”, [...] “a condition which is commonly associated with “a mismatch between apparent rates of change of supply and demand [sic]”’. By adding a time dimension to the definition, these authors also open the definition to subjective understandings of expectations about future changes. A large interdepartmental study by the Dutch government entitled Scarcity and Transition made this subjectivity more apparent when it defined scarcity as ‘not only an observed shortage of natural resources, but also a perceived dependency on natural resources and fear of their global depletion.’ In doing so, this study shifts the definition from an (objectively) observed shortage to the (subjectively) perceived dependencies and the fear of doing without.

Continuing the extension of this concept over and above a supply-demand equation, scarcity is problematized by a wide range of literature that, on the one hand, and perhaps counter-intuitively, includes the field of (neoclassical) economics and, on the other hand, builds on a number of studies that have recently been combined by Daoud under the call sign of the Scarcity, Abundance and Sufficiency (SAS) literature. Originating from ecology, development studies, philosophy and (economic) sociology, these studies open up the concept of scarcity and analyze it within a wider social context and in its relation to abundance. An increasing number of these studies argue that scarcity is socially constructed, that it is something that humans have created themselves intersubjectively (see chapters 5 and 7) instead of it being a state of affairs stemming from nature. In these studies, scarcity is analyzed

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7 North 1977, 569–570 quotes Aures, R.U. & N. Stedman (n.d.) ‘Material Scarcity and Substitutions’ in Essential Resources, International Industrial Conference Board (Washington D.C.: Industrial Research and Technology Corporation). This measurement of supply and demand is portrayed by the HCSS as either a static or a dynamic scarcity ‘paradigm’. Whereas the static perception of scarcity looks at fixed (but not necessarily known) supply and demand ratios and calculates the remaining years of consumption, the dynamic scarcity ‘paradigm’ takes into account that reserves are calculated based on whether or not extraction is, or will be in the near future, economic viable and technological feasible, just as demand can be influenced by a range of factors. See: HCSS 2010, 23–26.

8 Passenier and Lak 2009, 17.

9 Kemp 1978 defines subjective scarcity broadly, from a fear for dependency of ‘essential’ resources up to a fear of losing expected supply levels of culturally induced consumption patterns (Japan – fish). North 1977, 574 makes a similar argument: ‘But beyond the minimal requirements for basic survival, the concepts of abundance and scarcity tend to be elusive, subjective, relative and controversial.


11 Daoud 2010, 1207; Achterhuis 1988; Achterhuis 1993; Alatout 2008; Bataille 1988; Baumgärtner et al. 2006; Claassen 2004; Claassen 2009; Ciobanu 2006; Daoud 2011a; Dumouchel 2014; Matthaei 1984; Mehta 2003; Mehta 2010a; Möhring 2011; Mullainathan and Shafrir 2013; Perelman 1979; Panayotakis 2011; Princen 2005; Sachs 1993; Xenos 1989; Xenos 1987; Xenos 2010; Yapa 1996a.

not through a focus on the material availability and access to natural resources, but through a focus on the social (power) relations behind these material circumstances. Some, especially from development studies and philosophy, take a strong critical position and deconstruct current scarcity policies and responses, thereby pointing towards “the other side” of current power relations and showing how certain negative effects are not inherent to the phenomenon of scarcity per sé, but that they are in fact a result of historical events. In other words, these studies focus on the manner in which the taken-for-granted nature of scarcity acts performatively as it influences and naturalizes our thinking and subsequent actions.

This chapter turns towards insights from this critical literature to problematize the taken-for-granted nature of scarcity in IR and IPE. First, chapter 6.2 will introduce scarcity by providing some basic distinctions that one can encounter when studying scarce natural resources. Second, chapter 6.3 conceptualizes scarcity by introducing and discussing four different positions and interpretations on scarcity. Starting from shortages it follows neo-classical economics and the development of the idea of relative scarcity. This relative scarcity is then opposed to absolute scarcity as it is championed by environmental neo-Malthusians. Lastly, the concept of scarcification is introduced to discuss a Distributionist and Marxist interpretation of scarcity. Third, chapter 6.4 moves the discussion to the idea of relative desire that forms the basis of an understanding of relative scarcity. It starts with a discussion on the elasticity of needs but then uses philosophy to reflect upon the origin of relative scarcity and its key point of unlimited relative desires. From these relative desires, it follows that deprivation is relative as well. This chapter ends therefore with a brief discussion of the security dimension of scarcity by looking at the violence and conflict potential of scarcity and scarce natural resources, only to conclude that the organization of scarcity is of principal importance (in line with Distributionists). This is taken up in chapter 6.5, which combines many of the insights of the previous sections by turning towards the work of Foucault and Luhmann and their insights on scarcity. Here Foucault is used to indicate the governing and normalization that is done through scarcity based on his historic example of food scarcity. Luhmann in turn questions the taken-for-granted nature of scarcity by highlighting the paradoxical self-referentiality within the concept of scarcity itself. Lastly, chapter 6.6 concludes and reflects.

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14 As such, this chapter does not deal, excluding some small remarks and Luhmann’s negative conclusion, with an in-depth discussion of the literature on sufficiency, asceticism, steady-state economics and other ways to overcome scarcity.

15 Where the unspecified concept ‘scarcity’ is used in this text, it refers to the general summation of all four forms of scarcity.
6.2 Scarcity of Natural Resources

Before turning to the different approaches that are used to study the phenomenon of scarcity, a short overview of several often made distinctions and observations with respect to scarcity and natural resources will help to better comprehend the complex nature of both. These observations include, first, the different scarcity debates that follow from the distinct characteristics of natural resources as well as the realization that scarcity refers to other things besides natural resources. Second, they include the multiple positions and backgrounds of observers, which lead to different reflections on scarcity. Third, on a more abstract level, these observations need to be aware of the three main discourses behind scarce natural resources that also structure the positions and debates on scarce natural resources.

First, any singular understanding of scarcity needs to deal with the different characteristics of the resources in question. In fact, the range of interpretations below is only an indication of the range of different scarcity debates. A scholar can differentiate between the scarcity of finite, mostly non-renewable resources (e.g., oil, minerals and phosphates) and the scarcity of infinite renewable resources (e.g., air and food). Subsequently, renewable resources are divided in renewable goods (i.e., timber and fish) and renewable services (i.e., the ozone layer or hydrological cycle). These distinctions are not as clear-cut as they seem. For instance, the resource nexus blurs any sharp distinction, as in the case of contemporary production levels of grain or other food sources (renewable), which largely depend on the use of energy and phosphates (finite) for their production and transport. Other, often made, distinctions based on the characteristics of resources include the distinction between geographically fixed pool resources (e.g. gas fields) and transboundary mobile resources (e.g. river water, wildlife). This comes close to a more general distinction between stock resources (oil) and flow resources (sunshine). Likewise, the differentiation between rival and non-rival resources is comparable with a distinction between excludable, private resources (timber, water) versus common pool (shared resources) or public resources (wind).

This range of distinctions might indicate that scarcity only equates with natural resources. This is obviously not the case. Besides the first-order scarcity of the natural resources themselves, this thesis argues that people can also face second-order scarcity, which refers to a lack of knowledge, technology or capital to prevent (or lighten) scarcity of natural resources. In addition, time is a resource that is often considered

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16 Homer-Dixon 1999, 47.
17 Stock resources have fixed amounts, in theory to be used up at once, while flow resources regenerate and can only be used incrementally. Non-renewable resources have stocks, while renewable resources have both flows (solar energy is not a fixed total amount but a continuous flow of energy) and a combination of flows and stock (fish, other wildlife). On flows and stocks see ibid.
18 An example are pesticides: the development of chemical pesticides reduced the research and investment in
in short supply. Even more removed from natural resources, but also considered lacking are social relationships, like friendship and love, and conditions of happiness. While further removed, these are considered lacking because they are desired and at one moment translated into commodities that could be gained and lost. In fact, only when something is “needed” or “wanted” by society does it become scarce. The key term here is the verb "to become", in line with De Gregori who argues that: ‘resources are not; they become.’ This implies that “resources” are nothing but the 'property of things – a property that is a result of human capability.' Resources in this view derive from human knowledge (e.g. technological prowess) and the ascription of function to desired material and immaterial objects.

Second, within discussions on scarcity a number of observer-relevant distinctions play an important role. First, scarcity is analyzed from different levels of analysis that cross individual, household, local, national, regional or global perspectives. The manner in which people on a local level, live, perceive and measure scarcity is different from the aggregated numbers on a national, let alone on an international scale. The choice for a level of analysis thus has strong ethical implications, which are often not incorporated in the results. Second, scarcity is analyzed from a range of academic perspectives. Each of these perspectives favors its own assumptions and goals that pre-structure its conclusions, whether physical (availability), economic (affordability), political (accessibility) or social/cultural (desirability). Lastly, scarce natural resources are increasingly observed from the position of other natural resources, as in the discussion on biofuels between energy and food communities. The increasing number of interconnections between the different natural resources and their shared drivers and feedback mechanisms make this inevitable.

Third, crossing all these levels of analysis and different approaches to the study of scarcity and scarce natural resources are three grand narratives on the human-nature relationship and the origin and urgency of the problem of scarcity. First, in both traditional positivist and constructivist approaches to scarcity it is possible to find neo-Malthusians, often environmentalist and peak-oil/gas supporters, who argue that there are limits to growth and that people need to accept that resources are finite

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19 De Gregori 1987b, 1241; Zimmermann 1951; Le Billon 2007, 176.
20 De Gregori 1987b, 1243.
21 See for example Jarosz 2011.
22 For an overview of the inter-linkages of the 'global resource nexus' see the scheme and discussion in Evans 2010, 10, 17–21.
23 Mehta 2010a.
Taking scarcity for granted

and the biosphere is limited. Second, Ricardians, often neoclassical economists and engineers, who argue that growth is in fact limitless, because technological innovation and markets will always provide for new solutions that increase efficiency or lead to substitution. Third, in between these extremes Distributionists argue for a more social perspective as they claim that scarcity, including its causes and effects, mainly results from unequal power and wealth distributions. These positions, including the (geopolitical) security dimension will be discussed in detail throughout this chapter.

Fourth, one cannot understand scarcity without attention to abundance, its dialectical other. Just as security compares to insecurity, so one cannot think about scarcity without thinking about abundance. Mullainathan & Shafir offer an interesting description of abundance in this respect when they argue that abundance should be seen as the ability not to care. People who experience abundance have what they call “slack” or the breathing room to make mistakes and skip corners. This contrasts with people who experience scarcity and have to live and make decisions under the constant strain of having to choose between necessary alternatives and the constant stress of making costly mistakes. For Mullainathan & Shafir it is this stress and the need to care for each and every of their actions that distinguishes a scarcity mind-set from an abundance mind-set. For these authors there is a discrepancy between thinking about abundance when experiencing scarcity, or in thinking about potential new scarcities when experiencing abundance. One is more immediate (a scarcity mind-set) and the other more future oriented (an abundance mind-set). In line with Booth (chapter 5.3), they see abundance/security positively. However, this chapter will discuss below how (economic) abundance itself is cause for concern as it is often directly related to civil conflict. Just as for security, abundance is both the end-goal and a source of trouble on its own.

6.3 Problematizing the Concept of Scarcity

6.3.1 From Shortages to Relative Scarcity and the Supply of Economic Growth

As noted, scarcity is studied in a multitude of academic disciplines ranging from development studies, geopolitics, political ecology and philosophy, up to economics, the discipline that is said to have scarcity as its cornerstone (although the discipline of political science when defined as ‘who gets what, when, and how’ clearly starts from

24 Daly 1974; Daly 1997; Meadows et al. 1972; Meadows, Meadows, and Randers 2004.
25 Gowdy 1984; De Gregori 1987b; De Gregori 1987a; Zimmermann 1951.
26 Sen 1983; Mehta 2010a.
27 Mullainathan and Shafir 2013.
the same premise). Defined in terms of the supply and demand of limited resources against unlimited desires, it is almost impossible not to start an analysis of scarcity from economics and in particular neoclassic economics. As Luks argues:

The economic discourse, with its focus on scarcity, has had an influence on how we think, speak and argue about nature, the environment, resources and sustainability. It has had a profound impact beyond economics. Even when ‘non-economic’ issues are debated, economics is with us and scarcity is all-pervasive.

Remarkably, the first time economics was explicitly defined in terms of scarcity was in 1935 when the economist Robbins argued that: ‘[e]conomics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.’ While heavily contested and refuted as being too narrow and deterministic, even by Robbins himself, the definition quickly gained in popularity. In fact, most studies into natural resources, from both economic and (geo)political perspectives seem to take this mismatch between supply and demand as a naturally given starting point in their analyses.

In the economic literature, scarcity gained its central role through the development of the marginal utility theory by Jevons, Walras, Menger and others. While the early Marginalist revolution of the 1870s still acknowledged that utility should be seen as something broader than the pure consumption of economic goods, ‘the pursuit of utility maximization passed from a broad notion of welfare to […] a simple and deterministic logic of choice between alternatives bound by scarcity interpreted as resource constraints.’ Nowadays, this relative scarcity is taken as the fundamental assumption of economics. Daoud concludes in this respect, from a sample of economic handbooks, that scarcity is explained within neoclassical economics as a problem of efficient allocation of resources, because neoclassical economics speaks of scarcity whenever consumers have to choose between desires. In fact, scarcity stems from an ontic assumption of unlimited desires and limited resources (implying that individuals need to weigh their desires), which implies that scarcity is seen as universal (and thus that the ideal of abundance does not exists). For neoclassical economics, scarcity is a logic of choice. It is this logic and its underlying assumptions

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28 Lasswell 2011, 3.  
29 Luks 2010, 94.  
30 Robbins 1935, 16.  
31 Fine 2010, 77.  
32 Also Luks 2010.  
33 Jevons 1866; Menger 2007. For an overview see: Fine 2010; Matthaei 1984; Daoud 2011a; Neumayer 2002.  
34 Fine 2010, 75.  
35 Daoud 2011a, 13–16.
on universality and unlimited desires, which in time has not only been applied to individual consumers but also to organizations, societies and economies at large, in line with Luks’ quote above.

An interesting aspect of the spread of this narrow economic interpretation of scarcity is the role played by the technical assumptions of rational choice and utility maximization that came with the shift towards a macro-level general equilibrium economics. In particular, how these techniques with their focus on homo-oeconomicus have made the concept of scarcity dwindle to the background of economic thought.\(^\text{36}\) This was not automatic and there have been moments when this process was questioned. One such a moment was the economic crisis in the 1930s with its massive unemployment figures. In his analysis of the crisis, Keynes argued that the crisis showed that aggregated demand or unlimited desire was in fact limited. For Keynes, the drop in consumption was equally problematic as a constraint on economic growth as potential supply shortages. However, as Fine and Daoud argue above, Keynes’ macro-economic critique did not halt the expansion of this type of micro-economic thinking towards other topics in the social sciences.\(^\text{37}\) Instead, the field moved further away from scarcity considerations and focused increasingly on imperfect information and market policy failures. In this line of thought, scarcity is no longer a problematic restraint as markets and their invisible hand will correct and balance any shortages that might erupt. Consequently, the notion of scarcity is put on hold in economic considerations. As Fine summarizes:

So, rather than being central to its methodology, scarcity has, from Robbins onwards, served as a legitimizing device for the general application of the technical apparatus and formal deductive methods of mainstream economics by appeal to the scarcity/needs and wants dualism in the totally rarefied context of isolated individual or general equilibrium.\(^\text{38}\)

This does not mean that scarcity is never discussed in economic analyses. In fact, neoclassical economists are quick to point out that there is a difference between absolute scarcity, which problematizes the physical limits of resources, and relative scarcity, which does not see this as problematic.\(^\text{39}\)

The following chapter will discuss this in detail. It will show, for example, how Barnett & Morse in their seminal work *Scarcity and Growth* distinguish between a Malthusian (absolute) and a Ricardian (relative) form of scarcity, while claiming that ‘the possibility of technological progress clearly cuts the ground under the

\(^{36}\) See also: Xenos 1989, 68; Matthaei 1984, 88; Fine 2010, 74.

\(^{37}\) Fine 2010, 77–79.

\(^{38}\) Ibid., 81.

\(^{39}\) Raiklin and Uyar 1996, 49; Daoud 2010.
concept of Malthusian scarcity [, as r]esources can only be defined in terms of known technology. Simplistically put, neoclassical economics puts its trust in substitution, recycling, efficiency, technological creativity and the institutions that are necessary for these solutions to thrive. For neoclassical economics any shortages that do effect, result from failing institutions, be they markets or policies. Without such failures, the markets are believed to solve the problem of scarcity. Striking, however, is that all these solutions are supply side solutions; none of them question the demand-side of the equation. It seems as if most of the attention from neoclassical economics focusses on the solutions it offers to the problem of scarcity. Solutions, which, in short, entail the supply of further economic growth.

In doing so, these solutions have become something more than solutions: they have become goals in themselves. Goals that, ironically, can only be achieved if the necessary pre-requisite of scarcity is met first. As economic growth is hard to come by without “sufficient” aggregated demand and neoclassical economics subsequently problematizes measures that aim to reduce desire and consumption as market disturbances that hinder its production-oriented solutions, it follows that the study of economics takes the underlying assumption of the infinity of human desire as something taken-for-granted. This is especially relevant, as most applied disciplines, like agriculture or transport, often approach the issue of scarce natural resources with an even more simplistic economic understanding based on costs reduction, production increases and efficiency targets. In short, neoclassical economics (1) openly disregards absolute scarcity in favor of relative scarcity, (2) seems to be biased towards supply side solutions and (3) in doing so hides and naturalizes scarcity and excludes ideas and consequences of abundance in its theoretical considerations.

6.3.2 Absolute Scarcity and the Limits of Abundance

The relative scarcity of neoclassical economists and other Ricardians clearly contrasts with notions of absolute scarcity that are championed by neo-Malthusian environmentalists and peak oil/gas supporters. Where Ricardians focus on adaptation, unlimited desire and economic growth, neo-Malthusians focus on environmental, planetary and geological limits. Neo-Malthusian thought was boosted in the 1970s when both the Club of Rome report Limits to Growth and the two oil crises spurred

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40 Barnet and Morse 1963, 6–7; Stiglitz 1979. See also: De Gregori 1987a; Gowdy 1986; Solow 1974; Barbier 1989.
41 Neumayer 2002; Matthaei 1986, 106.
42 This is one of the issues between environmental economics and a stronger sustainable oriented ecological economics. See Van den Bergh 2001.
43 For example, Xenos 1989, 75; Fine 2010.
44 Matthaei 1984, 90.
attention towards the environment in general and the absolute scarcity of natural resources in particular.\textsuperscript{45}

Thinking in terms of absolute limits is principally associated with the writings of Thomas Malthus. In his \textit{Essay}, Malthus argues that geometric population growth is halted by the limits of subsistence, which in Malthus’ case entails the total amount of acreage available for the arithmetic production of food.\textsuperscript{46} This results in a diminishing marginal return on the production of food, as population growth exceeds the fixed available acreage and each additional person is able to grow less food. Hunger, sickness and conflict would be the result. Or as Pirages quotes Ashley: ‘[h]umans struggle to subordinate the environment and when “finally the limits to growth are reached, they have only to subjugate one another”’.\textsuperscript{47} From a Ricardian perspective, Barnett & Morse note that Malthus’ warning was (a) not new as Adam Smith also noted the tendency of (animal) populations to multiply up and over the available means of subsistence; (b) is less about scarcity, which he assumes as a given in his research, and more about the effects of population growth; and (c) that Malthus did not take other natural resources and possible substitution effects into account.\textsuperscript{48}

For neoclassical economics, absolute limits in terms of natural resource reserves or physical geography do not matter in economic terms. As Barnet & Morse conclude:

\begin{quote}
A limit may exist, but it can be neither defined nor specified in economic terms. Flexibility, not rigidity, characterizes the relationship of modern man to the physical universe in which he lives. Nature imposes particular scarcities, not an inescapable general scarcity. Man is therefore able, and free, to choose among an indefinitely large number of alternatives.\textsuperscript{49}
\end{quote}

The added “in economic terms” and “modern man” are important, as economists do not deny that there are physical limits to natural resources in the absolute long run (general/absolute scarcity) but reject the importance of these in the short to medium term and instead address shortages or ‘particular scarcities’.\textsuperscript{50}

\textsuperscript{45} Meadows et al. 1972; Meadows, Meadows, and Randers 2004. This threshold is sometimes dubbed the ‘new scarcity’ as opposed to the above mentioned ‘old’ scarcity – further conflating and confusing the definition of scarcity. See Simpson, Toman, and Ayres 2004, 29.

\textsuperscript{46} Malthus 1798.

\textsuperscript{47} Pirages 1983, 252 quotes Ashley 1980, 287. Pirages describes, in accordance with, among others, Wallerstein the drive to expansion and conquer resulting from a limited resource base, rising population and rising (cultural) demands as ‘lateral pressure’.

\textsuperscript{48} Barnet and Morse 1963, 53–54.

\textsuperscript{49} Ibid., 11.

\textsuperscript{50} Stiglitz 1979, 37. In fact, Stiglitz takes this argument to its absurdity by noting that he is not concerned with absolute limits like when the population mass exceeds the mass of the planet.
Irrespective the economic critique, Malthus’ ideas are still widely available and seem to have been extended from the effects of food scarcity to the consequences of both population growth and the limits of economic growth on environmental degradation and political conflict. Nowadays, this line of thinking by neo-Malthusians is mainly attached to the environmentalist movement, which received an enormous impulse in the early 1960s after the publication of a number of studies, among which the before mentioned *Limits to Growth.* The core of the current environmentalist ideas and concerns, however, dates back to the American Conservation Movement of the 1890-1920s. This movement was already concerned with a broad range of natural resources and their interconnections. Moreover, it rejected commercial and private interest motivated solutions for the conservation of natural resources for future generations. Instead this movement focused on efficiency and the ‘scientific management [of resources] in the public interests’, not unlike the line of discussion a century later.

What has changed is that current debates often fuse arguments from environmental (conservation) and ecological (preservation) perspectives. In its extreme, an ecologist sees limits everywhere but perceives them as thresholds that can be crossed after which the ecosystem will always correct itself and shift into a new trajectory. For ecologists, therefore, it is the actual intervention in the current ecosystem that matters as every intervention, even small ones, can drastically affect the habitability of the system for all living creatures. Environmentalists, in turn, take this same ecosystem but place human existence and, more important, her necessary future resource use at the center of it. As a result, environmentalists focus on the limits that will hinder the prosperity of current and future generations. The limits of environmentalists often refer to the absolute amount of non-renewable natural resources to be found on the planet, which in the case of resources like oil and gas is fairly easy to imagine. The ecological thresholds instead focus on the effects of natural resource use on the “carrying capacity” of our planet: the limit where the ecosystem can no longer support human intervention and resource use.

In response to the neo-Malthusian position on peak resources and absolute scarcity, neoclassical economics quickly pointed out the fallacies of extracting past trends from static data in dynamic (economic) systems, arguing that the only

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51 Hartmann 2010 argues that most ‘neo-Malthusian’ arguments nowadays are used strategically. She argues specifically that scarcity is mobilized to further political goals: fear sells.
52 Krautkraemer 2005, 7–8. Two main parties in this movement where the preservationist Sierra Club led by John Muir (the intrinsic value of nature) and the Conservationists of which Theodore Roosevelt was an important spokesperson (conserving for future use).
53 Bridge 2010; Friedrichs 2010; Smith 2012.
54 At stake here is not the ecosystem itself (an ecological/preservationist perspective), but the continuous and future use of resources for human benefit (an environmentalist/conservationist perspective).
historical trend is one of successful substitution and technological innovation.\textsuperscript{55} This claim is not without critique either. Norgaard argues that from a theoretical perspective neoclassical economists cannot in fact reject neo-Malthusian claims of absolute scarcity. Their sole focus on prices to determine whether something is scarce or abundant does not reflect material shortages, but only the people’s concerns about scarcity.\textsuperscript{56} With his empirical argument, Mitchell provides an even stronger case against Ricardian rejections of peak resources.\textsuperscript{57} While Mitchell does not dispute the historic trends of falling prices and substitution, his claim is that the shift to relative scarcity would not have been possible without the development of fossil fuels in the first place. He argues that the discovery and utilization of a seemingly unending supply of carbon fuels at a price not worth counting, in particularly oil, did not only have major social impacts but also enabled the substitutability mind-set of neoclassical economics and hence made possible a whole new form of economic government. Substitution sees resources as limited, but energy in general as unlimited. It thereby overlooks the intimate connection between this mode of reasoning and a particular group of (fossil) energy sources that is characterized by a high (although slowly declining) energy density. Renewable energy sources might be truly unlimited, but their Energy Return on Investment (EROI) is still debated, and their energy density is much lower: it costs more (installations, space, etc.) to gain the same amount of energy from renewable sources as compared to fossil fuels.\textsuperscript{58}

The debate therefore is not about the existence of absolute limits or thresholds, but about the importance of them. Shifting the debate from a discussion of scarcity to liminality highlights that neoclassical economics is actually afraid of a limit: the limit of economic stagnation. As De Gregori argues: ‘Rarely, if ever, can a people abandon a technology and its resources and return to an older pattern without loss of life (...) and living standard.’\textsuperscript{59} In the words of Simpson et al.: ‘Halting economic development is simply not an option.’\textsuperscript{60} This creed is so strong that Sachs remarked in respect to the concept of sustainable development and many of its policies that these are failing, because, for example in case of the construction of CO2 markets, it is not nature that is conserved but further economic development.\textsuperscript{61} In other words, theoretically

\textsuperscript{55} Stiglitz 1979; Solow 1974; Simpson, Toman, and Ayres 2004; Hirsch 1976, 19.
\textsuperscript{57} Mitchell 2013, 231–255.
\textsuperscript{58} Hall, Lambert, and Balogh 2014.
\textsuperscript{59} De Gregori 1987b, 1245. Then again, on p1253 De Gregori also defends the economic narrative by stating that environmentalist take ‘A concept of fixed, finite resources [which] provides the mindset that allows people to refuse to accept evidence of decreasing resource scarcity’.
\textsuperscript{60} Simpson, Toman, and Ayres 2004, 31.
\textsuperscript{61} Sachs 1993; Escobar 1996. See also De Gregori 1987b, 1257 who argues that ‘...the technologies [that] the prophets offered as resource-conserving [would] in fact (...) create the problem they claimed to be solving. Living within limits is inherently self-defeating, [... (see entropy)]’. Or Matthaei 1984 who
speaking a concept like sustainable development is paradoxical for we are doomed if we do (absolute limits) and doomed if we do not (loss of life and living standard).\textsuperscript{62}

There are three conclusions that can be drawn from this debate between neo-Malthusians and Ricardians. First, besides a fundamental disagreement on the importance of absolute geophysical limits, economic stagnation, environmental limits and ecological thresholds, neoclassical economics seems mistakenly to copy their supply measures in response to absolute limited resources onto the question of environmental thresholds. These two problems, however, cannot be compared, because the latter cannot be acted upon retroactively through substitution and other supply mechanisms. Second, while it would be easy to argue for an insolvable deadlock between neo-Malthusians and neoclassical economics, both have technological innovation as a main pillar in their responses (but value costs versus environmental impacts differently) and both actively influence current policies through policy prescriptions that are based on their respective future outlooks.\textsuperscript{63} Third, this last point on policy prescriptions shows that how we see the world helps give shape to the world. This, as Luks claims, implies that ‘finiteness, limits and “absolute scarcity” are just as much social constructions as the [...] markets, prices and “relative scarcity”.’\textsuperscript{64} Not because limits do not exist (they are real), but because it is only possible to define the maximum reserve of resources, the limit to economic development or the ecological thresholds and their relative importance by agreeing on them in order to act upon those agreed limits. To rephrase Dumouchel: ‘What makes scarcity [and limits] arise and become real in our social life [...] depend[s] on what people think [as well as] what they do.’\textsuperscript{65}

6.3.3 Towards Scarcification and a Conceptualization of Scarcity

There is another conclusion that can be drawn from the discussion so far. Ricardians and neo-Malthusians do not only discuss different forms of scarcity and have different ideas on liminality, but they differ fundamentally on their underlying claims that: 'Capitalist production does not find its limit in nature's scarcity, but rather in the internal contradictions of capital accumulation.' (p90) and 'Since the essential limit to firms in monopoly capitalism is the extent of the market, firms are led to work to maximize the production of sal[e]able output by creating products that will be discarded rapidly due to deterioration or changes in fashions.' (p91).

\textsuperscript{62} See: Matthaei 1984, 84; Neumayer 2002; Homer-Dixon 1999, 28–35. An interesting counter is provided by Lomborg 2012, a scholar criticizing the focus, even alarmist ways of thinking of environmentalists, on climate change. Not because climate change does not exist, but, as he argues, because there are other equally pressing problems in the world that we already experience now, like poverty. See also Krautkraemer 2005, 5; Daly 1974; Daly 1997.

\textsuperscript{63} Tilton 1996, 96.

\textsuperscript{64} Luks 2010, 99. See also De Gregori 1987b, 1247 who claims that 'Resources are not fixed and finite because they are not natural'; and Simpson, Toman, and Ayres 2004, 27–28 on terms like efficiency and optima.

\textsuperscript{65} Dumouchel 2013, 5.
ontology. Neo-Malthusians and their limited absolute scarcity approach the world in terms of a fixed status (state of being), whereas Ricardians approach it in terms of a process (state of becoming). This implies furthermore that neither of them actually discuss shortages, whose immediacy contrasts with the abstract and long-term oriented logics of both relative and absolute scarcity. By contrasting shortages with absolute and relative forms of scarcity, it becomes possible to create Table 1 with its two axels. Immediately, the absence of a processual and immediate form of scarcity presents itself. A form of scarcity that does not deal with theoretically infinite or finite resources and equally finite or infinite desires/wants, but with the actual supply and demand of products. This form of scarcity is dubbed *scarification* by Klein, but is based on a long Marxist line of thought.66

Together with neoclassical economists, Marx rejects the Malthusian logic. However, where neoclassical economics rejects absolute scarcity in favor of a logic of choice and relative scarcity, Marx rejects Malthus’ population law on other grounds. Through his concept of an ‘industrial reserve army’, Marx argues that overpopulation is not a threat but a necessity for capitalist accumulation.67 In terms of the subsequent scarcity, Perelman argues that Marx ‘does not treat scarcity as an independent category, but in relation to the mode of production, i.e., to the historically specific set of relations and forces of production, distribution, consumption, and so forth.’68 In particular, Marx contrasts the early development stage of a natural resource (cheap and easy) with later stages when the supply becomes harder and more difficult to extract. For Marx this means that both labor and capital are needed to fulfill the rising demand of ever harder acquired resources. In line with neoclassic economics, Marx argues that it is the inability or unwillingness to use labor or capital to increase the efficient usage of natural resource that leads to situations of scarcity.69 Simultaneously, Marx steps away from neoclassical economics and argues that scarcity cannot be conquered through economic growth and the promise of abundance, because of the underlying social inequalities between capital and labor within current economic systems. For Marx, any solution to scarcity would favor capital and thereby reinforce the capitalist form of domination with its inherent inequalities and shortages.70 In other words, Marx sees scarcity as the result of a historical process (a la Distributionists), not the end stage of a world of limits (neo-Malthusians) nor the taken for granted starting point of one’s analysis (Ricardians). He is therefore able to deal with both absolute and relative scarcity by blurring them in a process of scarification.

66 Klein 2011, 12; Galbraith 2001, 31–39. See also Homer-Dixon 1999; Mitchell 2013 (for an example); or Huber 2011a on the role of the Seven Sisters in the Oil industry.
67 Perelman 1979, 83.
68 Ibid., 84.
69 Ibid.
This perspective of scarcification builds on the insight that scarcities are created in markets that are flawed and constantly manipulated for the betterment of some. Hoeschele, in his work *Economics of Abundance*, analyses the range of mechanisms in modern economic systems and society that create scarcity. These ‘scarcity-generating institutions’ work in either of three ways: supply can be reduced, people can be barred from supplies and additional demand can be created.\(^{71}\) This includes, for example, companies buying oil fields, technologies or ideas from start-ups without developing them. It includes direct legal and political entitlements to goods, but also more indirect, and hence more powerful, ideological and religious ways of organizing social life. It includes monopolized positions in economic markets along a supply chain, channeling capital, knowledge and power through a select few companies (the food regime in chapter 3). It also comprises of the artificial creation of demand through advertisement or other plays on emotions, including fear and security (see chapter 5). Hoeschele, himself returns the discussion to security when he argues that:

> Implicated in all of the above modes of scarcity generation—as well as in others, such as property—that are to be discussed later, is violence. [...] Throughout history, whoever controlled the means of violence could use it to create a bottleneck between people and the fruits of their own labor, making the latter scarce. [...] The “scarce” commodity in the case of violence is most often security.\(^{72}\)

Hoeschele does not discuss this relation further other than to distinguish between ‘oppressive scarcities’ and ‘exploitative scarcities’, or respectively, between scarcities that result from wider social and cultural settings or scarcities that result from the way markets are organized. The latter are different as they ‘do not explicitly forbid or demand certain types of behaviour, but constrain human actions by making some resources abundant and others scarce’.\(^{73}\) Important constraints, which will be discussed further below, include property (whether private, public or intellectual) and money (in particular debt and interest).

Marx and Hoeschele are both critical about scarcity and the performative politics that surround it. This does not have to be the case. Like security, scarcity is highly normative but neither positive nor negative of its own. In his book *Carbon Democracy*, which reflects upon the history of the global oil industry, Mitchell analyses how the political choices within the oil, gas and coal industry at the introduction of a new technology or new infrastructure have long lasting social and political effects.\(^{74}\)

\(^{71}\) Hoeschele 2010, 10.
\(^{72}\) Ibid., 28.
\(^{73}\) Ibid., 31.
\(^{74}\) Mitchell 2013; Mitchell 2009.
Mitchell discusses the intentionally created distance between oil production facilities and refineries, often across international borders, to minimize the political power of laborers to disrupt supply lines. He describes this as an intentional process aimed to prevent political strikes, like the ones witnessed in the coal industry in both the mines and the transport by rail and canal. From a democratic perspective, however, these initial coal strikes contributed strongly to an elite acceptance of initial democratization processes. In other words, Mitchell describes how scarcity and the threat of it have been used as a political instrument for the spread of democracy itself, and how these have been countered through the introduction of new scarcity-mechanisms.

With scarcification, Table 1 provides four different types of scarcity that problematize any simplistic understanding of scarcity and the relation between people and their environment. First, what is often described and feared in popular language as scarcity of natural resources, especially in energy and food, are in fact acute shortages or hiccups in supply due to bad weather, technical failures, political disruptions or natural disasters that lead to ‘a shortage of supply in relation to the normal state of affairs.’ Second, in neo-Malthusian terms, more long term forms of absolute scarcity follow when there is a general limit on the availability of natural resources that forces people to choose and engage in tradeoffs. The difference between shortages and absolute scarcity is a difference in time and abstraction with one focusing on supply/demand and the other on resources/wants, but both are ontic end-states that detail their origin. Third, the presence of shortages and a processual

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<td>(Distributionists)</td>
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Legend: (S) = supply, (D) = Demand, (R) = resources, (W) = Wants/Desire, (~) = change

75 Daoud 2011b, 34 lists 14 different descriptions of scarcity, including absolute, relative, anti-, social, external, internal, post-, scarcity-, subjective, objective, artificial, general, universal, and natural. He then adds another by himself (quasi-scarcity) and misses at least five; static and dynamic, see HCSS 2010, 25; concrete scarcity, see Claassen 2004; operational, actual, projective and scarcification, see Klein 2011, 12.

76 Claassen 2004, 39 [author’s translation]; Klein 2011.
interpretation of relative scarcity introduced political and economic induced forms of shortages that can be described in terms of *sarcification*: the process of making things scarce by either keeping supplies low or creating demand.\(^7^7\) Lastly, it becomes possible to make a distinction between *absolute scarcity* and *relative scarcity*. The difference between these two stems from, on the one hand, the above mentioned perceived objective limit of absolute scarcity, and, on the other hand, a social process wherein humans, for different reasons, constantly strive for new things and thus also (re)produce new *relative scarcities*.\(^7^8\) It is this last shift and its underlying assumption of unlimited desire that will be discussed below, as it is the (con)fusion of these different meanings within debates on scarcity that lead to, among others, the policy consequence that often technical supply oriented solutions are offered to deal with a form of scarcity that is in essence social in origin.\(^7^9\)

6.4 From Relative Scarcity to the Relativity of Unlimited Desire

6.4.1 Elasticity of Needs and Wants

Short as the above descriptions on the position of neoclassical economics on absolute scarcity and shortages may be, it already shows the evolution in economic thinking in simultaneously dealing with and moving away from absolute scarcity and shortages by focusing on supply oriented technological solutions and the workings of the market. Relative scarcity contains a paradox, however, one that Hoeschele describes as

\[\text{[t]he most basic paradox of our times, the times that we call modern and the mode of social organization we call capitalist, is that, no matter how many resources we consume, we never seem to have enough.}\]

\(^8^0\)

This is not to say that neoclassical economics is completely blind to the demand side. For instance, in the discussion on scarcity people often separate basic needs from more luxurious wants. The field of economics incorporates this by ascribing a lower elasticity to resources like food, water and shelter that are ‘basic to human survival’, over luxurious products like perfume, muscle cars and so forth.\(^8^1\) People are willing to pay higher prices for longer for those products that they see as essential, whereas for other non-essential products their demand is more flexible in line with their

\(^7^7\) Klein 2011, 12; Galbraith 2001, 31–39; See also Homer-Dixon 1999; and for an example see Mitchell 2013; or Huber 2011a on the role of the Seven Sisters in the Oil industry.

\(^7^8\) Claassen 2004; Achterhuis 1988; Xenos 1989.

\(^7^9\) Claassen 2004, 39–41.

\(^8^0\) Hoeschele 2010, 1.

\(^8^1\) Pimentel and Pimentel 2008, 1.
income. The question of basic needs is difficult to settle on two accounts. First, as the discussions on energy security and food security have shown, what is a basic need changes over time. The example of food security highlights how the basic need for food in the 1970s initially was based on the quantity of calories, but these days also includes the quality of food, the nutritional value and the social acceptance. Another example comes from the transport sector, with cars a luxury item a century ago but these days a necessity as societies are organized around them (especially the US) and the absence of a car means that one is disadvantaged in finding and working a job, and thus to provide for oneself.82 Second, basic needs are relative. All people need water, but at the same time, persons from Western Europe are advised not to drink the tap water in underdeveloped countries. Similarly, whereas car ownership and driving skills are almost a basic need in the US, in Western Europe the car is decreasing in popularity among starters, especially among those working and living in cities.

There is nothing new about the conflating line between basic needs and other desires. Economics tries to solve this by defining demand as a combination of desire and the willingness to pay. The elasticity highlights the willingness to pay, but it does not explain the needs, let alone the unrelenting desire of modern societies. In other words, it seems to take the underlying desire for different and evermore goods as an ontological given.83 This is problematic in line with Keynes’ observations on the 1930s economic crisis, the critique of neo-Malthusians on ecological thresholds and the observations from Hoeschele and Marx on scarcification and the creation of needs and wants. Theoretically, however, it is a necessity for without unlimited desires, relative scarcities would not exist and the constant search for solutions to those relative scarcities would halt. This could potentially mean that people are also no longer able to tackle those limited subsistence demands that they do need.

6.4.2 The Relativity of Desire

Not much is written on the origin of relative scarcity and the infinite needs and wants of the public at large, nor on the relation with abundance and sufficiency.84 Sociology and philosophy are filling this lacuna by analyzing the origins of the ‘paradoxical scarcity of abundance’ or the fact that even in abundance there is scarcity.85 Below this section focusses on the work of Claassen, Achterhuis and Xenos and the social mechanisms at work behind the unlimited relative desire that underpins relative

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82 Illich 1974; Campbell 2005.
83 Yapa 1996b, 715 notes that in so doing economics is unable to differentiate between basic needs and other non-essential demands.
84 However, heterodox economics (including evolutionary and ecological economics) questions the universality of scarcity by broadening the initial assumptions of economics towards questions of both the economics of scarcity and the economics of abundance. See Daoud 2011a.
85 On the term ‘paradoxical scarcity of abundance’ see Raiklin and Uyar 1996, 54.
scarcity. These authors explain scarcity by focusing on the origins of the infinity of humankind’s desires and wants. They share that scarcity is not an objective fact of our world, but that it is a consequence and invention of modernity following Sahlins’ pre-modern counterfactual. Together these authors build and move beyond the perspective of scarcification and argue that relative scarcity is a product of modernity that naturalizes an unlimited relative desire. In the words of Dolphijn & Tuin: ‘[d]esire is never a given. Rather, like a long shadow projected from the past, it is a forward-moving horizon that lies ahead and towards which one moves. Between the “no longer” and the “not yet,” desire traces the possible patterns of becoming.’

In his 2004 Dutch work *Het Eeuwige Tekort* [*The Eternal Shortage*], Claassen starts with a discussion of scarcity similar to the one above and concludes that in modern day language use relative scarcity is often discussed in terms of absolute scarcity and shortages, which leads him to argue for the inherent incompatibility of the loud and frequent calls for productionist technological fixes for an inherently social problem.68 Claassen then visits classic liberal authors like Rawls and Hume, and shows how these, similar to neoclassical economics, take relative scarcity as their starting point. More specific, Claassen (as well as the authors below) argues that somewhere between the 17th and 18th century liberals, like Locke, Rawls and Hume, naturalized scarcity by placing it outside humans and describing it as a natural law, as a fact of nature.69 In other words, by accepting relative scarcity and then hide it behind shortages and absolute scarcity. Then again, contra most modern-day geopolitical neorealist discussions on absolute scarce resources, these early liberal scholars argued that scarcity does not automatically result in competition. Instead, they claimed that scarcity forces people to cooperate even if they are selfish, as humans are inherently driven to further their personal development and cooperation is beneficial to this on the long-term.70 After discussing this exemplary liberal standpoint, Claassen turns to social philosophy and in particular the works of Achterhuis and Xenos.71

Like Claassen, Achterhuis reflects on scarcity with the writings from classic authors, like Hobbes, Rousseau, Locke, Marx and Foucault. Contra Claassen, Achterhuis uses this literature to deduce several social constructions that have made relative scarcity possible (e.g. comparable to Hoeschele’s scarcity mechanisms). The first of these has

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66 Sahlins 1972.
67 Dolphijn and Tuin 2012, 32.
68 Claassen 2004, 40–41.
69 Achterhuis 1993, 107 describes Locke as the author who hid scarcity in full sight by blaming nature for not providing enough resources and tasking humankind to manage and improve it with labour. Locke, in Achterhuis’ view, provided us with the ‘modern images of nature and the idea of unlimited progress and growth.

70 Claassen 2004, 47–72.
been the shift from common forms of ownership to *private ownership*. This shift enabled the exclusion of ‘rivals’ from natural resources in both the present and future, even without actual physical control of the good.\textsuperscript{92} The second construction is *money*, which strengthened ideas of accumulation as it enabled people to gain wealth independent of the storage life of natural products. Money makes it possible to produce more than what people consume themselves, it enables production for profit. Money also offers a relative objective way to compare people and hence strengthens social ideas of equality.\textsuperscript{93} Achterhuis builds on this, thirdly, through Girard’s concept of *mimetic contagion*, which describes the drive of humans to mimic their peers, to want what other people want so that they are not left behind.\textsuperscript{94} As Dumouchel, a student of Girard, states: ‘[a]n agent’s preferences are always under the influence of other agents’ preferences.’\textsuperscript{95} By mimicking others, individuals strive for the same goods. Where the realist Hobbes sees a triangular struggle between two persons based on the characteristics (quantity/quality) of the good in question, Girard argues that the good itself does not matter much, but that the other person is seen as a model to be emulated. The other can either be a positive model that people copy in admiration, or s/he can be a negative model from which people distance themselves by refusing anything that is connected to those persons.\textsuperscript{96} This, Achterhuis remarks, leads to a situation where those not involved in the initial mimetic struggle become victim to it nevertheless. The mimeses of two agents results in a situation where the goods become scarce for all involved, but relatively instead of absolute.\textsuperscript{97} Together the mechanisms of money, property and mimetic contagion make scarcity into a comparative or relative form of scarcity. They also lead to the conclusion that an increase in a particular good, i.e. through mass production or efficiency, may enlighten a logic of choice but will not solve the phenomenon of scarcity itself.\textsuperscript{98}

Where Achterhuis explains relative scarcity with Girard’s mimetic contagion, Xenos, writing at roughly the same time, explains the phenomenon of scarcity through Hirsch and his ideas on the social limits to growth and the difference between a material and positional economy.\textsuperscript{99} For Hirsch, goods are not only scarce because of physical limits, but because of their role in society.\textsuperscript{100} In a material economy of consumer goods, an

\textsuperscript{92} Achterhuis 1988, 185–212.
\textsuperscript{93} Ibid., 58, 131–136, 256–259.
\textsuperscript{94} Ibid., 39–59.
\textsuperscript{95} Dumouchel 2013, 10.
\textsuperscript{96} Achterhuis 1993, 113; Claassen 2004, 77. Dumouchel 2013 argues that negative mimetics results from mimicking the other without actually copying. Instead, one chooses a radical alternative: not blue but red just because it is the other.
\textsuperscript{97} Achterhuis 1988, 59.
\textsuperscript{98} See for another critique Bataille 1988; Baudrillard 2013.
\textsuperscript{100} Hirsch 1976, 1, 21. Importantly, Hirsch analysis starts from the stage after biological needs have been met (food, shelter and clothing).
increase in the number of goods or the number of people with access to that good does not downgrade the product in question. This contrasts with a positional economy, which builds on the status of a good. In such an economy, the perceived quality is negatively correlated to the number of products or people that have access to them. An education at Harvard, a Lamborghini or a highway decrease in worth with more people enjoying them, just as the position of a general or president becomes useless if shared. Hirsch points here to the social limits to growth, as more economic growth in a positional economy will only lead to more competition for these positional products; in fact, even the ability to compete for positional goods becomes a commercialized activity itself (as we see with university degrees). Xenos provides the example of clothing and fashion to conclude that even when material goods are available in abundance (e.g. clothing), scarcity will remain present because humans have an inherent drive to seek recognition and prestige (e.g. fashion). Where Girard’s mimesis describes a general never ending process, Hirsch’s ideas explain the insatiability of desire that neoclassical economist and liberals like Hume and Rawls take-for-granted. What they share is the idea of recognition, which leads Claassen to argue that a desire for recognition is the ultimate positional good that drives the constant desire for more goods themselves, whether in terms of goods, services, abilities or positions.

As stated above, all three authors agree that scarcity, as we know it today, is a product of modernity and unknown in pre-modern hunter-gatherer societies. This does not mean that pre-modern societies were unfamiliar with shortages (or absolute scarcity for that matter). They lived through them on a daily basis and depended on their ability to move to overcome these situations. However, the argument is that they were not familiar with the individualistic form of relative scarcity and infinity of needs that people experience today. From this, it follows that the solution to scarcity

101 Ibid., 27.
102 Ibid., 6; Claassen 2004, 110–111.
103 Xenos 1989, 5. Xenos puts fashion, a material good that follows social scarcity, as an alternative to paintings and other positional goods.
106 In relation to this argument, in personal communication Professor Lobo-Guerrero reflected on an anecdote from Colombia, where Western aid-workers and the government tried to help Amazon Indians, who were forced to remain within a small-protected enclave, by providing them with foodstuff. When they later returned they found all the animals slaughtered and the excess food eaten. The Indians had no idea of accumulation or savings. Their whole lives they had instead relied on movement as an answer to shortages. This contrast heavily with a settlement mind-set where one is dependent on ‘externalities’ to get the resources one needs / is addicted to.
107 See Matthaei 1984, 86. This distinction explains what Mehta 2010b, 21 means when she rejects a pre-modern counterfactual. Instead, she argues that: ‘interpretivists would reject Polanyi’s and Shalins’ primitive versus market society dichotomy since all ‘actors’, be they in ‘capitalist’ or ‘primitive’ societies, would constantly be interpreting the phenomenon of scarcity (as rooted in locally and historically specific meaning, belief systems and culture) and developing social practises and institutions accordingly.’
lies not in an increase in production and supply, nor is it a return to a pre-modern practice of resource use. While theoretically the answer to scarcity sounds quite simple, the long and marginalized history of (religious) asceticism, which argues for an extreme form of material abstinence and which dates back to Aristotle, displays the difficulty of reducing the wants and needs of “modern” human consumers. Recent research on the concepts of needs, sufficiency, abundance and affluence confirms the difficulties encountered when analysts try to focus on the demand side of scarcity, when they try to introduce more equal forms of scarcity-mechanisms, or when people want to pursue a non-growth or steady state model of economics, so different from our current economic model based upon growth oriented neo-liberal capitalism.

6.4.3 Allocation, Conflict, and Relative Deprivation

In the absence of any clear resolution, scarcity will remain all pervasive. With relative scarcity based on relative desires, what follows are feelings of relative deprivation: that people feel deprived from something they know others possess. However, it is only when people compare themselves with others and know that others have it 'better' that they feel deprived. The resulting temporal and geographic disparity between haves and have-nots opens the floor to strife, poverty, social inequality, etc. As Le Billon describes the relation between scarcity and abundance: 'if it is scarcity that creates value, it is abundance that creates wealth.' These conflictual relations between haves and have-nots are mainly analyzed from a Distributionists perspective, especially in the development literature. Distributionists focus on the social power and wealth relationships between (future) haves and (future) have-nots. For scholars working from these assumptions, the quantity and quality of natural resources are not the actual problem. The problem for these scholars is to be found in the socially organized judicial, political and economic access (entitlements) to the resources. This paragraph will not study the entitlements themselves, but shifts the attention to the role that scarcity plays in the organization of social relations, in particular, its conflict potential.

While the many practices of cooperation on interstate and local levels indicate that Hardin, when writing his *Tragedy of the Commons*, might have been wrong in arguing that the collective action problem on natural resources can only lead to environmental degradation and more scarcity, the potential for conflict remains a

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108 See Claassen 2004 for an extensive discussion on possible ways out of scarcity.
109 Daoud 2011b; Soper 2007; Princen 2005; Galbraith 2001; Panayotakis 2011; Hoeschele 2010. On economic no-growth or steady-state models see Daly 1972; Daly 1993. Daly is now considered one of the frontrunners of the sub-discipline of ecological economics, see Van den Bergh 2001.
captivating argument. Consequently, most geopolitical research within IR and policy reports on natural resources still start from a realist perspective, emphasizing and prioritizing the risks and security dimension of these resources in terms of resource nationalism, land-grabbing or dependency. Yet, a quick overview of the conflict literature shows that conflict and natural resources are closely connected, but that the evidence is inconclusive on any specific relationships. Much depends on the definition of conflict, what is considered to be the main onset motivation, and whether one includes conflicts over territory (e.g. land) under the definition of a natural resources (often excluded). Even more important is whether one studies interstate conflicts or intrastate (civil) conflicts and whether one studies the relation between conflicts and scarce natural resources or the relation between conflict and abundant resources.

On an interstate level a possible correlation between scarce natural resources and conflict remains unclear, partly indicating that it is unlikely that international wars have been fought purely based on the scarcity of natural resources. At the same time, abundant resources are correlated to interstate conflicts, oil in particular. Yet, while they are correlated, the direct causal relationships remain unclear. Abundant resources could for example play a role in fueling the instruments of war, function as a strategic military target or act as a motive for the onset of the conflict. These motives are most interesting but also most difficult to argue for, as they are often hidden behind other nationalistic, sovereign, democratic or terrorist intentions and justification, which play a defining role and without which the wars are not fought. A case in point is the Iraq War (2003-2011) where publicly and legally oil and gas did not play a role in the run up to the conflict, regardless of the consensus on their

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112 Wolf et al. 2005, 84; Lappe 2003; Mehta 2003. Including international treaties (the Energy Charter, UNCLOS or one of the thousands of water conventions - see Wolf et al 2005), information sharing initiatives (the JODI program), and on a local level initiatives like the Landless Workers Movement (Brazil), Green Belt Movement (Kenia) and water sharing practices (India). On common pool resources see: Hardin 1968; Agrawal 2001; Dietz, Ostrom, and Stern 2003.

113 Conflict can be read in multiple ways: it can either be violent or non-violent, if violent it can be physically violence (incl. oppression/forced labour), cultural violence (racism, religion) or structural violence (inequality). However, most often conflict is only distinguished from wars and clashes based on the number of fatalities following the UCDP/PRIO dataset: (civil) war [>1000 fatalities], (civil) conflict [>25 fatalities] and clashes [material damage and fatalities <25]. See Gleditsch et al. 2002. In fact, during the food crisis in 2008 most conflict was not described as conflict, but instead as violent social unrest, see: Evans 2010, 23.


115 Caselli, Morelli, and Rohner 2013, 5; de Soysa, Gartzke, and Lie 2009.

importance and Greenspan’s affirmative remarks post facto.\textsuperscript{117} Even the most-likely case of the Japanese decision to attack Pearl Harbor can be questioned on whether the Japanese petroleum supply concerns alone initiated it.\textsuperscript{118} In respect to other abundant resources, the links are even less clear, as highlighted by the research into fresh (river) water and fish.\textsuperscript{119} Wolf et al. identify only one interstate war fought over water dating back to early Greek civilization. Similarly, a recent database on water conflicts by Gleick shows that there have been 24 interstate conflicts (out of the 343 entries between 3000 BC to 2014) and all of them are classified as clashes instead of actual wars or conflicts.\textsuperscript{120}

All of the other entries from Gleick’s \textit{Water Conflict Chronology List} take place on a local level within states. Indeed, statistical research shows a stronger correlation between natural resources and civil conflict.\textsuperscript{121} Theoretically, natural resources play an important role in relation to civil conflicts via a variety of mechanisms that are frequently summarized in terms of greed versus grievance explanations, but also include resource curse explanations and weak-state mechanisms of failing government.\textsuperscript{122} On the one hand, scarce renewable resources are said to create social unrest and grievances on a local scale. For example, a population increase could lead to competition over resources, just as climate change could lead to a degradation of the local environment and thus to more competition over the remaining sources of food and water. Both of these result in lower and disruptive economic trade and a further unequal distribution of the remaining renewable resources.\textsuperscript{123} However, empirical research has been unable to find strong correlations between scarce renewable resources (including environmental degradation) and civil conflict.\textsuperscript{124} On

\begin{footnotesize}
\begin{enumerate}
\item Woodward 2007.
\item Smil 2008, 355–356.
\item Wolf et al. 2005, 84; Gleick 2014. Selection based on violence between two or more states and with water as a development dispute or military target.
\item For a recent discussion, see Koubi et al. 2014.
\item Homer-Dixon 1994; Homer-Dixon 1995; Homer-Dixon 1999 argues strongly in favour of this mechanism and argues that scarcity doesn’t always lead to more innovation as people could fall into an ingenuity gap as social relations break down (contra economics). In other words, scarcity could take forms that make it extremely hard to develop alternatives.
\item Koubi et al. 2014, 229; Theisen 2008, 810; Raleigh and Urdal 2007. Some even argue that fighting a conflict over scarce resources alone is irrational. The suffering party, often the weakest as they lack the resource in question, is not likely to attack its stronger neighbour as only a total, but unlikely, victory could make it worthwhile. Salehyan 2008, 317. Salehyn builds his argument in part on Fearon 1995. However, for a data driven analysis: Burke, Hsiang, and Miguel 2014; Raleigh and Kniveton 2012; Hsiang and Burke 2014.
\end{enumerate}
\end{footnotesize}
the other hand, greedy mechanisms based on the earnings derived from the export of (lootable) non-renewable resources, like oil, diamonds and minerals are correlated to civil conflicts.\footnote{Collier 2000; Collier and Hoeffler 1998; Collier and Hoeffler 2005; Collier, Hoeffler, and Rohner 2009; Dalby 2004.} Sometimes as a prize to be won, but more often as an important factor to finance and prolong ongoing conflicts.\footnote{Collier 2007 also discusses this in terms of 'feasibility'. Ross 2004a; and Ross 2004b confirm this duration effect, but reject any onset effects.} In other words, pending the specific characteristics of the resource and conflict, there seems to be a correlation between abundant natural resources and civil conflict.\footnote{For an overview see Koubi et al. 2014, 232–237. Although Brunnschweiler and Bulte 2009 question this.} A correlation that is as much or even more due to failed governance structures than it is to ‘greed’ explanations. In short, while scarce natural resources are not strongly correlated to conflict, it can be concluded that abundant non-renewable natural resources are, on both a civil and interstate level.

The difficulty in showing a correlation, let alone a direct causal relationship, indicates the complexity of the link between conflicts and scarce or abundant natural resources. The focus on the potentiality of conflict also obscures research that focusses on practices of cooperation and the aversion of conflicts. Clearly, it is erroneous to reduce natural resources and conflict to each other: conflicts often involve multiple dimensions (environment, politics, history, culture etc.), its mechanisms are multiple and intertwined, and the resources themselves are always more than a simple source of income and economic growth, as can be witnessed by the cultural and religious importance of the Ganges in India.\footnote{Le Billon 2007, 164; Mehta 2010b; Bavinck, Pellegrini, and Mostert 2014.} While natural resources play an important role in conflicts, the conflict potential of either shortages or abundance depends in large part on the specific historical extraction and ownership patterns.\footnote{For the weak-state thesis, see Fearon 2005. For the resource curse thesis, see Ross 1999; Ross 2006; Van der Ploeg 2011.} As Le Billon argues, perceptions of insecurity and dependency can only come about in the wider context of ‘the [historical] creation of markets and associated commodity chains, predicated upon the social construction of desirable resources.’\footnote{Le Billon 2001, 576.} Mehta makes a similar argument by arguing that: ‘Whether markets, innovation, rights, institutional fixes or bits of all of the above are evoked to deal with resource scarcity, they are all socio-political choices governed by the politics of allocation and decision-making and contestations about what meanings are embodied in resources.’\footnote{Mehta 2010b, 12.} She too draws the attention away from material and technical aspects to the choices made within the ‘politics of allocation’. No more silver-bullets or a reference to

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scarcity as a pre-defined problem, but a critical reflection on the manner in which the production, distribution and consumption of natural resources are organized and governed.

In addition to these empirical and critical analyses, the Hobbesian inspired work of Achterhuis is useful to reflect on a theoretical level about how scarcity relates to conflict. Counterintuitively, Achterhuis’ argument centers not on the Hobbesian perspective of fear, envy or conflict, but instead turns towards Rousseau and the norm of human equality.\textsuperscript{132} The Enlightenment claim that all humans are equal, has, according to Achterhuis, if not “created”, then at least enhanced feelings of relative deprivation by enabling people to compare themselves with one another on the quantity and quality of the goods they possess – often in terms of money. Whereas pre-modern societies were organized around constant movement and strong family or clan ties with their hierarchical structures and solidarity obligations in times of shortages, modern society is built around a Hobbesian individualism and the (perceived) separation of economics and politics.\textsuperscript{133} Achterhuis posits himself here against liberal thinkers like Rawls, who, by way of his ‘veil-of-ignorance’, argues that this individualism forces people to cooperate.\textsuperscript{134} Instead, Achterhuis explains scarcity by combining a Hobbesian triangular relationship (two persons struggling over a good) with the insights of Girard and Dumouchel (not the good itself but mimesis). In doing so, he concedes to Adam Smith that economics occupies a middle ground between cooperation and competition as it offers trade and the ‘invisible hand’ of the market as a peaceful solution to the distribution of resources and goods.\textsuperscript{135} In other words, for Achterhuis the market and the individual experience of scarcity offer the inherent competition between people a way out for the best of society, without having to result to physical conflict.

While modern economic society might have found a way to contain the strive between social groups and agents mimicking each other based on individualization, chapter 6.3.2 showed that there are still people who (unintentional) end up as victims of this struggle.\textsuperscript{136} In their mimetic and social strive for goods, (rich) agents can either privatize previously common resources, completely exhaust certain goods, or, by their increasing and changing demand, make previously “luxuriously” goods a necessity for others to partake in society (cars, internet, etc.).\textsuperscript{137} As a result, victims can be found in the third world, following the global extraction patterns of natural resources.

\textsuperscript{132} Achterhuis 1988, 116–182.
\textsuperscript{133} Dumouchel 2014; Dumouchel 2013; Achterhuis 1988, 47–54.
\textsuperscript{134} Claassen 2004, 49.
\textsuperscript{135} Achterhuis 1988, 57; Dumouchel 2014.
\textsuperscript{136} Achterhuis 1988, 217; Claassen 2004, 77–80; Mehta 2010b, 16; Ross 1996.
\textsuperscript{137} Gibbons 1991, 269.
but also within Western societies based on an unequal distribution of wealth. As Hoeschele argues:

In many social contexts, certain levels of consumption are considered obligatory in order to “belong.” Thus, constantly escalating consumption is enforced. This represents a loss of freedom for those people who either do not want to buy these things, or cannot afford them.

These processes are so deeply ingrained in our modern society that Achterhuis concludes, comparable to Sachs, that any solution based on sustainable development, is still a ‘rush forward, precipitated by the fear of scarcity […] and the destruction of nature, [which] would only be accelerated as the world’s rich would continue to raise their own consumption levels. This negative consequence turns relative scarcity into a savior and a structural source of violence at the same time. A savior, because it reduces actual conflict through practices of trade and innovation that lead to economic growth. And at the same time a structural source of violence, which could very well lead to conflicts but often is simply accepted as inevitable and the responsibility of the individual in question. Dumouchel calls this the ‘ambivalence of scarcity’ and argues that ‘[s]carcity does not seek to protect agents from violence or hardship by making them reciprocally responsible, but to prevent the spread of violence by removing each person’s incentive to participate in the conflicts of others’. Violent conflict is thus not an automatic consequence of scarcity, yet scarcity is a form of violence itself.

6.5 The Self-reinforcing Nature of Scarcity

6.5.1 Normalizing Scarcity

So far, scarcity is discussed in this chapter from two different levels of abstraction. First, the most obvious and recognizable level is the one that is studied extensively elsewhere and which regards the uninterrupted access to and competitive ownership of a set of given scarce and abundant natural resources. Second, scarcity is discussed from a more ethical and critical position regarding a fair allocation of resources as well as strategic use of scarcity (arguments) to favor existing power relations and ownership positions within ‘the historically constructed political economy of resources’ and ‘geographies

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139 Hoeschele 2010, 10.
140 Achterhuis 1993, 113.
141 Dumouchel 2013, 4; Dumouchel 2014; Achterhuis 1988; Claassen 2004, 78–79.
142 Evans 2010; Galtung 1990.
143 See also Mehta 2010b, 22.
of war’.144 Here the argument is that natural resources mean different things to different people at different locations in different times. Arguing otherwise is to push for a particular understanding of scarcity and its inherent material effects and power claims. Within this second branch, a range of post-structural scholars increasingly studies the structuring effects of language; or how not only the strategic use of arguments but the meaning and everyday language on scarcity itself – through subsequent practices – structures particular ownership and allocation regimes.145 This aspect will be discussed in more detail below with the historic work of Foucault and the systemic work of Luhmann, in order to find out what scarcity “does” by being what it “is”.

Foucault’s main reflection on scarcity can be found in Security, Territory and Population, a lecture series given at the Collège de France in 1977 and 1978.146 For Foucault scarcity is an example that captures the shift in thought around the 17th and 18th century from sovereign and disciplinary forms of power to what he calls governmentality (discussed in detail in chapter 8). For now, what matters is that Foucault studies how people govern shortages, which he defines as ‘a state of food shortage that has the property of engendering a process that renews it and, in the absence of another mechanism halting it, tends to extend it and make it more acute.”147 In particular, Foucault notes how a group of scholars and policy makers, the Physiocrats, transformed how food shortages were governed in France in the second half of the 18th century by following and extending the British ‘Corn Laws’ of the 17th century.

Foucault describes how food shortages originally were seen in France either as an unlucky event caused by bad weather or as a consequence of ‘man’s evil nature’, by which people referred to his incessant desires and his unwillingness to share.148 Based on these conceptualizations of the causes of scarcity,

scarcity was countered by […] a system of legality and a system of regulations, which was basically intended to prevent food shortage, that is to say, not just to halt it or eradicate it when it occurs, but literally to prevent it and ensure that it cannot take place at all.149

144 Le Billon 2001, 575; Le Billon 2007. See also: Mehta 2010b, 15; Ciobanu 2006; Aguilera-Klink, Pérez-Moriana, and Sánchez-Garcia 2000; Hildyard 1996; Alatout 2008. For example, solutions to scarcity are often framed in terms of ‘managing’ scarcity, putting the focus on technical fixes instead of cultural adaptation.
146 Foucault 2007.
147 Ibid., 30. Foucault refers to the practices of hoarding and monopolization, which occur when goods are seen as being in short supply, thereby increasing prices and reinforcing the initial shortage and idea of scarcity. Below the work of Luhmann is used to scrutinize this self-reinforcing aspect of scarcity even more.
148 Ibid., 31.
149 Ibid.
In other words, an 'anti-scarcity system' that tried to prevent the fear of scarcity by controlling all economic and trade related aspects of it, through price controls, hoarding prohibitions, export restrictions, import diversification and the stockpiling of reserves.\textsuperscript{150} The Physiocrats remarked, however, that this also reduces the incentives and financial options for farmers to increase production, thereby initiating higher prices and a desire to govern this aspect of the supply chain as well, which in turn leads to production quotas, and so on in a continuous spiral of failing management and a desire for more meticulous control.

Foucault identifies this latter reflection as the main economic argument used by the Physiocrats to shift the governance of food shortages away from 'the obsessive fear of scarcity' to 'the reality of grain'.\textsuperscript{151} Instead of a policy aimed at the prevention of scarcity by intervening on the market, the Physiocrats focused on all the things that influenced the production and trade of grain, and argued that all of these needed to be understood and supported through an apparatus that governs them favorably.\textsuperscript{152} They replaced the system of sovereign and disciplinary regulation with an economic system based on market mechanisms and an acceptance of scarcity. As Foucault paraphrases the physiocrat Abeille: '[scarcity] is never the pure and simple total absence of the means of subsistence necessary for a population, because if that were the case the population would quite simply die. It would die in days or weeks, he says, and we have never seen a population disappear due to the absence of food.'\textsuperscript{153} Why? Because before all the food is eaten, measures are enacted to cope with the anticipated situation.

Such a political economic acceptance of scarcity transforms the fear for shortages and its subsequent 'anti-scarcity' measures (which actually create them) into a market that relies on relative scarcity. Instead of a whole population suffering from food shortages this results in 'some scarcity, some dearness, some difficulty [...] and consequently some hunger' for some individuals.\textsuperscript{154} This has two consequences. First and perhaps counter-intuitive, for such a market system to work scarcity is a prerequisite. Rephrased more bluntly, some individuals, even a multitude of individuals, need to go hungry so that the population as a whole does not suffer from scarcity.\textsuperscript{155} This leads to a situation where, as Nally argues, ‘the old problem of “hunger amidst scarcity” will give way to the distinctly modern crisis

\textsuperscript{150} Ibid., 33.
\textsuperscript{151} Ibid., 36.
\textsuperscript{152} Ibid.
\textsuperscript{153} Ibid., 38.
\textsuperscript{154} Ibid., 42.
\textsuperscript{155} Ibid.
of “hunger amidst abundance”.156 As Nally concludes after reflecting on modern agricultural practices:

The conviction that further production gains will seamlessly translate into more calories for the poor is empirically shaky and ideologically driven. So long as the world’s hungry remain poor consumers, they are unlikely to reap the benefits of a food system hinged on the cash nexus. Calories will continue to flow up the food chain, reappearing as meat or fuel, available at a price.157

Secondly, the market in this perspective ‘is at once an analysis of what happens and a program for what should happen.’158 It is both a way to interpret scarcity and a way to deal with it. In other words, somewhere in this discussion scarcity transformed from an exogenous variable in need of a solution into a norm on which people can be judged. Inevitably, with people able to break the norm, there is cause to protect the norm from those people who, under the threat of shortages and ideas of absolute scarcity, do not behave “rationally”, who do not wait for prices to drop but start hoarding in the expectation that prices will increase even more.159 The argument put forward here is that the shift initiated by the Physiocrats is itself a particular way of dealing with scarcity that is based on a particular understanding of scarcity. A way that is secured against those who try to play faulty (smugglers, hoarders, raiders, etc.) by using sovereign and disciplinary regulatory mechanisms to protect itself from alternative ways of dealing with scarcity. Nally, for example, describes how international intellectual property rights on genetically modified seeds are used to criminalize (non-Western) local anti-scarcity measures like local redistribution practices and practices of seed sharing and saving.160

Within this short analysis from Foucault, everything discussed so far comes together. In the shift from the fear of scarcity to the reality of grain, it shows a glimpse of the origins of neoclassical economics and their theoretical shift from shortages to relative scarcity. In the idea that the current economic system is built on a geographical and chronological dispersion of shortages over a population, one finds an early indication of the relativity of desire and the theoretical depressing conclusion that some people always will need to go hungry because the market does not function without scarcity and price differences. This is the real limit of abundance: if goods

157 Ibid., 49.
158 Foucault 2007, 40.
159 Ibid., 43–44.
160 Nally 2011.
are truly abundant, markets break down. This implies that the economic solutions to scarcity can only be achieved at all if scarcity is prerequisite. It also means that markets do not have real incentives to deliver abundance systemically, as Nally shows in the quote above.\footnote{See also: Huber 2011a; Mitchell 2013.} In fact, following Hirsch, they cannot even deliver abundance because the norm of scarcity, relative scarcity, has shifted into the social domain onto social goods. Moreover, as Achterhuis argues, ‘while within the economic space every redistribution of ownership reinforces scarcity,’ Foucault teaches that in respect to the social norm ‘every form of resistance reinforces the rule of scarcity.’\footnote{Achterhuis 1988, 274 [author’s translation].} We can decide not to trade, but it is impossible to break away from the norm of scarcity and not to think in terms of it: ‘scarcity [truly] is all-pervasive.’\footnote{Luks 2010, 94.}

### 6.5.2 Structuring Scarcity

What Nally and Achterhuis allude to here is something that Luhmann has studied in-depth, namely the systemic self-referential paradox inherent to scarcity. Interestingly, this returns this chapter to the initial paradoxes in its introduction and to the earlier conclusions that neoclassical economics “hides scarcity” or that violent conflict is not an automatic consequence of scarcity, but that scarcity is a structural form of violence itself. For the German scholar Luhmann scarcity is not a natural state of affairs, but a concept that is organized primarily through the way it is organizing us. But how is it organizing us? For Luhmann the answer lies in the coding of scarcity. People talk about scarcity or abundance, have or have not, secure or not secure in a constant repetition of distinctions. Luhmann argues that without distinctions and their communicative use these concepts, including scarcity, would not exist (see also chapter 7.4). It is in their constant use that these distinctions are reinforced and that the inherent paradox of scarcity is hidden within an increasingly complex social system that tries to tackle it.

Luhmann studies scarcity in depth on at least two occasions: first, in a chapter in *Die Wirtschaft der Gesellschaft* from 1988 and, second, as a case in his work *Risk: A Sociological Theory* from 1993.\footnote{Luhmann 1988, chap. 6; Luhmann 1993, chap. 3.} As a scholar renowned for his work on social systems of communication, Luhmann offers a systemic perspective on the activity of using a concept, like scarcity, when communicating. For Luhmann, scarcity is a self-referential problem based on a distinction between scarce and not-scarce. The communicative use of the concept of scarcity is self-referential because the social observation of scarce or not-scarce results in the operation of the distinction between access and no-access. As Luhmann notes: ‘scarcity means that access (the classical
Taking scarcity for granted

For one is at the cost of access for others. When one person gains access to a resource, s/he actively excludes others from its use. This is well known. However, by approaching it from his systems perspective (as opposed to individual events) Luhmann concludes that scarcity, as it operates through access, is a self-referential paradox: ‘Der Zugriff erzeugt mithin Knappheit, während zugleich Knappheit als Motiv für den Zugriff fungiert.’ By excluding others based on a social observation of scarcity, scarcity becomes manifest and presents itself as the main motiv for excluding those others in the first place.

This paradox, Luhmann argues, is continuously repackaged and hidden in other new distinctions. The paradox of access leads to a code based on the distinction between haves and have-nots, which transforms the issue of exclusion into one of allocation and distribution through two specific media: property and trade. The first, property, came into being the moment when access to a good became the possession of a good. The strength of this medium stems from repetition: once you have access to a good and ‘own’ it, you keep having it. In fact, Luhmann argues, in line with De Gregori above, that something does not become a ‘good’ until it can be owned. The original paradox is hidden within the idea of property, which legally is defined as ‘[d]er “Genuß” (fruitio) des Eigentums’.

This is another paradox as enjoyment can only come about after ownership, but simultaneously is also the justification for it. What interests Luhmann at this point is once more the coding of this problem, in this case that of property and non-property. He wonders, especially, why some people allow others to own anything at all? His answer is that once ownership was settled as an institution (by force?), it became tradable. People allow ownership because they have a chance to acquire (and lose) it in exchange. Importantly, after a while the ability to trade and exchange has become more important than the actual property. In this shift to financialization, scarcity turned from an object into a risk, as it endangered a person’s ability to trade and gain wealth. In this transformation, the paradox of scarcity is hidden once more.

Luhmann continues by noting how, with the conversion of property towards the importance of trade and exchange, the enjoyment of property changed as well. The rationality of enjoyment shifted from the enjoyment of the good itself towards the enjoyment of the good in relation to other goods and/or the potential enjoyment to be gained by spending one’s money elsewhere. In other words, the first conversion from access into property was taken up within a second conversion from property into

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166 Luhmann 1988, 179.
167 Ibid., 188–194.
168 Ibid., 193.
169 Luhmann 1993, 63.
money. This second coding has two consequences. First, by shifting to the institution of money, the world (e.g. the economy), loses its stability as it moves away from the “real” economy, based on property, towards a “virtual” economy with its principal focus on money. The economy becomes a dynamic system based on distinctions (with help of quantification) and the search for an imagined equilibrium.\(^\text{171}\) What Luhmann identifies here, by referring to Locke, is the theoretical shift from absolute scarcity to relative scarcity. Second, in this shift to relative scarcity, scarcity itself is ‘duplicated’ on to money.\(^\text{172}\) No longer are people witness to scarce goods alone. They face the constant struggle to gain money, money that banks and countries actively regulate to keep it scarce (and thus valuable).\(^\text{173}\) Essentially, the only way people can gain money is through payments. They can buy, sell or invest, which, in line with Hirsch can now also be done for social reasons (status) instead of the actual need for a good (hunger).\(^\text{174}\) Another possibility is to gain money through saving. By saving, money is withdrawn from the system effectively making it even scarcer. Here Luhmann touches upon another distinction, between those who can save and those who cannot save. In other words, between those with capital and those without capital.\(^\text{175}\)

In relation to capital, there is one last concept that Luhmann identifies as playing an important role from a communicative systems perspective. Just as money transcends the distinction of property, so labor is the last option that reinforces and enables individuals to move up in the world. It is through labor and the production of value that those without can earn the money and later buy the property that they do not have. Nowadays everybody is encouraged to work in order to earn one’s ‘freedom’ in terms of social and economic independence. According to Luhmann, this makes labor the ‘parasite’ within the paradox of have and have-nots as it works on the contingency between property and no-property.\(^\text{176}\) Then again, it also reproduces the initial code because labor is scarce too. It has a price, to be paid by those who can afford to do so. Luhmann pushes this argument as far as to claim that nowadays the distinction capital/labor is built on the moral claim towards capitalists and the economic system to provide for additional demand for labor, or as he concludes: ‘Die Paradoxie der Knappheit erscheint als Forderung an das “kapitalistische System”.’\(^\text{177}\)

All other institutions, like sovereign wealth funds and national banks but also explanations like Socialism and Capitalism, are operations and extensions of this

\(^{171}\) Ibid., 196.

\(^{172}\) Ibid., 197.

\(^{173}\) Compare with Mullainathan and Shafir 2013 on the impact of this constant struggle.


\(^{175}\) See Hoeschele 2010, 119 for a discussion of debts as a scarcity-mechanism.

\(^{176}\) Luhmann 1988, 210–223.

\(^{177}\) Ibid., 222; For a more critical / Marxist analysis of the Capitalist system’s use of scarcity, see Panayotakis 2011.
self-referentiality of scarcity. To clarify this, Luhmann reflects a bit more at the mimetic contagion argument of Girard. Where Girard sees imitation between two persons as the source of conflict over a good, Luhmann, from his self-referential coding perspective, sees a continuing process of *imitators* being *imitated* leading to a situation where a person is ultimately in conflict with himself. Or as Luhmann summarizes his response: whereas Girard sees imitation as a characteristic of human beings, Luhmann sees it as a result of the double contingency of imitation and imitator inherent in the bivalent logic of the system itself: in this case based on the paradox created by exclusion. Moreover, he argues that it is impossible to see such codes, except by becoming an observer who steps outside the code and logic of scarcity itself. ‘Nur für einen Beobachter ist es noch möglich, das zu sehen, was das System selbst nicht sehen kann: die konstituierende Paradoxie. Das System selbst vertraut der *unsichtbaren Hand*.‘ Unfortunately, the importance of observation of these highly political distinctions at all levels of the scarcity paradox, is, in practice, eroded by the increasing referral to experts, as expert do not decide on issues but manage them. They manage the affairs of the system from within the system and thus reinforce the particular socio, ethical and moral dimensions to which the system references.

So besides continuously highlighting the bifurcation by becoming aware of the other side of the distinction on which these forms are based, what does Luhmann offer as a way out? The short answer: there is no easy way out. The paradox will continue to reproduce itself in new and more complex distinctions. In line with chapter 6.4 Luhmann agrees that only a better understanding of people’s limited needs and desires has any hope of changing the course of the current system. This can be done as ‘[s]carcity, basically, is nothing but information. It tells us about the availability of something. In its societal context […] it tells us about possibilities and impossibilities.’ By using scarcity in Luhmannian terms as a source of information to observe the world, scarcity, like security, is effectively a form of time binding. It provides individual ‘events structural value’ by creating codes that work in an autopoietic process of self-referencing. These autopoietic self-referential operations connect disparate events and provide them with meaning, in the process altering both the material and social world. For scarcity, Luhmann argues, this primarily implies the introduction and governing of strong social tensions.

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179 Ibid., 182–184.
180 Ibid., 183–184.
181 Ibid., 182 [emphasis added].
182 Klein 2011, 23–24.
184 Klein 2011, 17.
For scarcity in society is a social problem. Although we experience it in the material dimension as a limitation of the quantity of available goods, we would certainly be able to reach some basis for understanding – if it were not for the possibility of unequal distribution and were it not rational (as theories of property have maintained since antiquity) to enhance inequality because this provides better opportunities to discover and exploit the economic potential of a society. Much more so than in the case of the law, time binding in the case of scarcity is at the cost of social tensions; it is a binding of time that serves to construct a complex, efficient social order rational in its own terms.\textsuperscript{186}

In short, where Foucault describes the historical transformation of the idea of scarcity from absolute scarcity and shortages to relative scarcity and the governing of a constant circulation of supplies with scarcity as the necessary norm for the system to work, Luhmann describes the inherent self-referentiality of scarcity as something that can never be “solved” but will only get more complex. Neither Foucault nor Luhmann reflect on the fairness of scarcity or the current political-economic system, as they see fairness as a way to organize the governance of scarcity (Foucault) or a further hiding of the initial paradox of scarcity (Luhmann). What both share, however, is the understanding that the ongoing identification of scarcity is just as much the temporal closure of a long political and systemic process as it is the start of others. Scarcity is a social fact par excellence and, enhanced by its material dimensions, one hard to get away form.

6.6 Reflection

If there is one lesson to be taken from this chapter, it is that scarcity should not to be taken-for-granted. On the contrary, this chapter argued for four different logics of scarcity (shortages, absolute scarcity, scarcification and relative scarcity) each referring to different aspects and stages of human resource use. What is more, these four types of scarcity are influenced by three discourses (neo-Malthusianism, Ricardians and Distributionists) and they are studied by a wide range of disciplines, from multiple levels of analysis and in relation to a wide range of resources. Together these aspects show that scarcity is more than a supply and demand equation. Instead, what can be concluded is that the form of scarcity that is experienced today in well-to-do societies is a particular modern form of relative scarcity, which has been institutionalized and systemized, and thereby influences the outcome of those who do struggle with shortages and absolute scarcity.

\textsuperscript{186} Ibid., 63.
This chapter argued that neoclassical economics has shifted its focus from shortages to relative scarcity through a technical apparatus that focuses on supply side solutions. This has two consequences. First, such an approach excludes economies of abundance and fixates the materiality and especially the social dimensions behind scarcity, which results in technological inspired solutions for socially created issues. Second, these Ricardians are questioned by neo-Malthusians for abandoning the issue of limits, whether in the form of limited resources or the threshold of the carrying capacity of earth. By juxtaposing these two against the Ricardian limit of economic stagnation following abundance, it became clear that limits and their relative importance, like scarcity, are not pre-given but depend heavily upon shared understandings. In addition, scarcity was concluded not to be a direct source for conflict, although scarce and, in particular, abundant resources do play an important role in conflicts. This conclusion was supported by the theoretical argument that markets and price-setting systems allow struggles between individuals over resources a non-violent way out, in part by making the struggles an individual responsibility.

Simultaneously however, relative scarcity is itself a form of violence towards the victims of the constant struggle between agents over goods. Based upon ideas of property, money, equality and mimetic contagion together with a constant search for status, it was shown that the unlimited desires behind scarcity have a clear social origin and, with economics, indeed no ending. Unfortunately, without an end there is also no escaping relative scarcity. Whether this is positive or negative is open for interpretation. What is not open to interpretation is that this shift in conceptualization of scarcity has led to new forms of governance. These new forms have dispersed shortages geographically and temporally over a population: on the one hand conquering shortages but on the other hand enforcing a system of relative scarcity upon those who, individually, still struggle with those shortages. Unfortunately, scarcity is an absolute necessity for these forms of governance and markets to work, up to the point that abundance has become the main threat. Somewhere in this process, relative scarcity has become the norm that people cannot evade. A norm, whose violence is hidden within a self-referential paradox of increasing complexity. The scarcity paradox started with scarcity and the code of access, but moved to similar paradoxes in property, trade, money, savings and capital. Undoubtedly, when the communicative use of scarcity activates its self-referentiality and fighting the norm results in a re-acknowledgement, then the only thing that should be taken-for-granted should be the breaking away from the social and material effects of scarcity.

For the conceptualization of energy security, this chapter offers four points of thought. First, in addition to the logic of security, which provides some understanding into the proliferation of energy security, the logic of scarcity offers an alternative explanation for the proliferation of energy itself. It points to the constant desire for
more energy and highlights the search for technical and productivist solutions that are indeed prevalent in energy. Secondly, it questions the geopolitical realist reading of immanent conflict over natural resources, by proclaiming not the resources but scarcity itself as the main source of violence. Simultaneously, however, it questions a neoliberal market reading of energy security that (while offering a conflict free way of distributing resources) is fundamentally flawed and will never truly solve scarcity because it needs it to work in the first place. Third, what this analysis also highlights is the importance of the three discursive positions of Ricardians, neo-Malthusians and Distributionists, which are available in natural resource debates. In discussing different aspects of natural resource use, these positions pre-structure any debate: they talk past each other and principally cannot be reconciled. Lastly, in reflecting upon this debate on scarcity and abundance from a security perspective, what is noticeable is the confusion that results from incorporating the security dimension of those who try to secure abundance (what they already have) and those that try to secure scarcity (that what they do not have) within the same concept, like energy security. In fact, the confusion is deliberate as it results from the strategic use of scarcity, the securitization of scarcity, by those who work form a security of abundance. Energy security in this sense, like scarcity, is often used as a closure, as a politics of ontology that defines what is problematic and in need of a solution. This chapter however shows that nothing ever just is problematic; there is always a social and material becoming.