

4. Overcoming the tragedy with the Ostroms

Having analyzed the social structure and logic of the tragedy of the unmanaged commons, I now turn to consider how to avert this supposedly inevitable catastrophe. An important characteristic of the approach I outline is that it aims to provide us with a different conception of social arrangements that overcome or dissolve the traditional market-state dichotomy of democratic capitalism, which inherently limits democratic ways of shaping social institutions and solving social and ecological problems. In order to do this, we will turn to the work of Elinor and Vincent Ostrom on the sustainable and democratic management of the commons. The exploration of their work will be structured as follows. Firstly, I analyze what Elinor Ostrom understands as “grim” social dilemmas that underlie not only the tragedy of the commons but almost all forms of collective action. In a second step, I consider the Ostrom’s arguments against a centralized and hierarchical state or “monocentric order” as a possible answer to these social dilemmas. In a third step, I critically examine several problems or tragedies that result from privatization and the market. After having discussed the limitations of both monocentric orders and markets, I then turn to the Ostroms’ work on how collective action can be cultivated and realized in order to overcome social dilemmas. A central feature of this is the development of reciprocity, trust and reputation through the communication of the affected agents. The stabilization of this collective action requires, in turn, the democratic definition of rules for both the use of common pool resources and their mutual monitoring. I will then discuss these ideas with reference to Elinor Ostrom’s eight design principles for the sustainable self-governance of commons. In a final step, I explore how these insights from microsituational settings can be scaled up into what Elinor and Vincent Ostrom call a polycentric system of democratic governance. Last but not least, I critically examine the limits and blind spots of their work.

Before delving into this investigation, I would like to briefly explain why I largely focus on the work of Elinor Ostrom and only marginally on that of Vincent Ostrom. The reason for this is rather simple: Elinor Ostrom’s extensive empirical and theoretical work provides us with an amazing array of examples of common pool resources and public services, including fisheries, forests, pastures, ir-

rigation systems, water basins and police security. Throughout her life, Elinor Ostrom searched to define the contingent conditions of possibility for overcoming the tragedy of the commons – or put differently, the conditions of possibility for human cooperation, democratic governance and ecological sustainability. And it is for this work that she then received the Nobel Prize in Economics in 2009. In contrast, while Vincent Ostrom also used the tragedy of the commons as a starting point for the development of his ideas, his focus was less on commons and more on the political theory of a polycentric or federal model of the state that was based on many of Elinor Ostrom's more empirical insights. For this reason, while I focus on Elinor Ostrom's work, I also integrate Vincent's arguments and ideas in order to complement those of Elinor.¹

4.1 Collective action and “grim” social dilemmas

In Elinor and Vincent Ostrom's theories, the notion of democracy is of central importance as a means to overcome the tragedy of the commons. While much literature on democracy focuses on issues such as voting behavior, party politics, parliamentary institutions and the state, Elinor Ostrom approached the problem of democracy from a micro-situational perspective, drawing on game theory and focusing on social dilemmas and collective action. In her Presidential Address of the American Political Science Association in 1997, Ostrom explains the importance of collective action theory for political science – and for almost all human interactions:

The theory of collective action is *the* central subject of political science. It is the core of the justification of the state. Collective action problems pervade international relations, face legislators when devising public budgets, permeate public bureaucracies, and are at the core of explanations of voting, interest group formation, and citizen control of governments in a democracy. (E. Ostrom 1998: 1; original emphasis)

According to Ostrom, collective action dilemmas are present in “all major economic, political, and social projects requiring individuals to associate in allocation activities” (E. Ostrom 2003: 21). For this reason, it has been her lifelong aim to develop intellectual tools to understand “the capabilities and limitations of self-governing institutions for regulating many types of resources” (E. Ostrom 2008a: 2).

¹ In order to deal with the rather awkward and cumbersome repetition of the names Elinor Ostrom and Vincent Ostrom, I will sometimes also refer to the two authors simply as Vincent and Elinor.

In this sense, Ostrom understood the “tragedy of the commons” as a collective action or social dilemma, which, in turn, can also be understood as a prisoner’s dilemma involving two people (E. Ostrom 2008a: 2-5). According to Elinor, social dilemmas arise in situations in which “individuals make *independent* choices in an *interdependent* situation” (E. Ostrom 1998: 3; emphasis added). This is an important point in my later, more in-depth discussion of an ecological understanding of the commons. For now, it is important to note that such dilemmas occur “whenever individuals in interdependent situations face choices in which the maximization of short-term self-interest yields outcomes leaving all participants worse off than feasible alternatives” (ibid.: 1). As we have already seen, these dilemmas should, according to theoretical models such as the one proposed by Hardin, generate defective strategies that ultimately lead to suboptimal outcomes (resource depletion, inequalities etc.). In economic literature on game theory these outcomes are defined as a Pareto-inferior Nash-equilibria; in more colloquial terminology we might generalize from Hardin’s reference to a “tragedy of the commons” and speak simply of ‘tragedy’. In general terms, Ostrom argues that such tragic situations boil down to the “free rider problem”, which she defines in this way:

Whenever one person cannot be excluded from the benefits that others provide, each person is motivated not to contribute to the joint effort, but to free-ride on [i.e. take advantage of] the efforts of others. If all participants choose to free-ride, the collective benefit will not be produced. (E. Ostrom 2008a: 6)

The reason for the general fascination with these models is that their structures create a situation in which the best individual strategies ironically lead to a suboptimal joint outcome. For this reason, Elinor Ostrom writes, “The paradox that individually rational strategies lead to collectively irrational outcomes seems to challenge a fundamental faith that rational human beings can achieve rational results.” (E. Ostrom 1986: 4) It must be noted that this insight is quite striking because it contradicts, first and foremost, the previously mentioned assumption in economics that individual subjective interests lead to positive social outcomes, which is the basic principle of the invisible hand that underlies belief in the self-regulation of the market.² Furthermore, these dilemmas also suggest, more generally, that cooperation

2 It could be argued that the two models (the “invisible hand” and the “tragedy of the commons”) cannot be compared because one model is based on private property regimes and the other on common property regimes. In economic theory, the answer to the problem of over-use and tragedy is therefore privatization. We will discuss the limits and problems of privatization in more detail later. For the time being, however, it is important to note that privatization cannot overcome the problem of tragedy because people are intersubjective beings that share a common reality and therefore also share certain goods that cannot be privatized. One example of this shared reality is, for example the shared legal structure of the market itself. To illustrate the relationship between the market and the commons, we

is impossible or, rather, irrational for supposedly rational agents within specific social arrangements. Although Ostrom agrees with Hardin that “from within the game, participants are trapped in an eternal struggle of tragic proportions” (ibid.: 6), she questions whether such a situation truly represents the full diversity of social interactions and institutions.

Thus, Elinor Ostrom not only criticizes the simple model based on this “grim trap” but also the policy prescriptions whose equally “grim character” has resulted from such models (E. Ostrom 2008a: 8). Her main criticism is aimed at the simple dualism, both sides of which are frequently presented and discussed as alternatives to the tragedy: centralized state authority versus privatization and the market. Before examining the Ostroms’ own alternative to the tragedy, I would like to analyze their interpretations and criticisms of the centralized state and the market in more detail in order to clarify the limitations of these two models as answers to the problem of the tragedy of the commons. Let us therefore begin with the centralized state, which Vincent Ostrom calls the “monocentric order”.

4.2 The tragedy of monocentric orders

According to Vincent Ostrom, monocentric orders are realized according to a theory of sovereignty that only envisages a single center of ultimate authority. This is the Hobbesian model of the Leviathan that Hardin propagated. The assumption underlying this idea is that to overcome perpetual war or the destructive competition between private, egotistical individuals, a single center of authority must create a single system of law for all. In order to be able to do this, the center of authority must be “the source of law, [...] above the law, [and] cannot be held accountable to law” (V. Ostrom 2011b: 352-3). Furthermore, this law is enforced by the same source of authority (ibid.: 353-4). The conflicting violence between factions is therefore resolved by creating a “monopoly of the legitimate use of physical force in the organization of a society” (ibid.: 353; emphasis omitted). The monopoly of the use of force in society transforms all these quarreling individuals and groups into a unified organization called the state. Abstractly speaking, oneness is to supersede, contain and structure the many. The function of such a monocentric order is to “dominate [...] all patterns of organization that are subject to law” (ibid.) so as to limit and enable individual freedom.

Drawing on Max Weber, Vincent Ostrom further argues that a monocentric order is not only characterized by a single center of supreme authority, but that it

could thus say that the commons provides the stage or background setting for the market. While the self-regulation of the market might function *on* the stage, I argue that it leads to the destruction of the stage.

is closely associated with and dependent on hierarchical command structures that are realized in a bureaucratic form of organization. In general terms, the command structure in monocentric, hierarchical organizations is justified based on an increase in efficiency, rationality and objectivity. The hierarchical command structure and the monopoly of the use of force in society enables monocentric orders to impose effective sanctions to prevent free riding and to collect levies for protecting and developing both common-pool resources and public goods (V. Ostrom 1974: 58-9). This ability to enforce rules and collect taxes provides an efficient answer to the relatively high deliberation and transaction costs created when pooling resources by creating contracts between all individuals. Furthermore, the management of a resource through a single organization enables externalities to be internalized (ibid.: 63).³ Thus, monocentric orders are assumed to increase the efficiency and rationality in the organization of human affairs.

In relation to the efficient implementation of impartial and uniform laws, Elinor Ostrom emphasizes, however, that uniform rules are problematic when dealing with commons, because of the ways that common pool resources often differ from one another. If uniform rules are applied across such different contexts, the problem is that either false incentives are created or people do not take the rules seriously and thus end up pursuing short-term maximization strategies nevertheless (E. Ostrom 2008a: 11). This problem is sometimes accentuated when resources that were held in common by local communities are nationalized by the state. The problem arises where the state, however, lacks the ability to monitor and enforce the regulation of those resources, with the result that a common-property resource is transformed into an unregulated open-access resource (ibid.: 23; E. Ostrom 1999: 495).

Vincent Ostrom's rather fundamental critique of monocentric orders is not, however, based on common-pool resources, but rather on the widespread and well-known critique of bureaucratic systems in welfare states, made especially popular by the work of Ludwig von Mises, Gordon Tullock and, more generally, public choice theory. Here, it is argued that individuals working in large bureaucracies are – like all human beings – self-interested, which ultimately leads to corruption and to the organization's executives losing control over it. Here, Elinor Ostrom also points to the paradox that it is assumed that the Leviathan will be a wise and ecological ruler while the individuals using the resources are short-sighted, ecologically ignorant egoists (E. Ostrom 1986: 8). Second, she argues that state bureaucracies are

3 It is important to note that this economic rationale of vertical integration drives *both* public agencies and private firms to become centralized, hierarchical organizations, as Robert Coase argued in his article *The Nature of the Firm* (Coase 1937: 390-1; V. Ostrom 1974: 59). This insight radically contrasts the common interpretation of bureaucracy as a form of organization only found in governments and public administration.

not exposed to competition and are therefore prone to being inefficient and unresponsive to the diverse and changing demands of citizens and consumers. Continuing this line of criticism, Vincent argues that monocentric, hierarchical bureaucracies enable a monopoly over the legal instruments of coercion and thus provide “unique opportunities for a few to exploit the many” (V. Ostrom 1993: 59), opening the door to oppression and tyranny. Vincent rounds out these criticisms of monocentric, bureaucratic orders by concluding – again with reference to Max Weber – that such organizations can become self-perpetuating organizations that reduce all individuals – rulers and ruled – to subservient cogs in an “iron cage” (Weber 2001: 123; V. Ostrom 2011b). This leads us to a supposed “paradox of bureaucracy” in which collective attempts to enable individual positive freedom – through welfare services, for example – will be undermined by an unresponsive and possibly corrupt paternalism on the part of governmental officials (V. Ostrom 2011b: 355–6).⁴ Furthermore, through its individualistic conception of rights, a monocentric, bureaucratic (welfare) state supports the atomization of individuals and, thereby, undercuts the desire and capacities of individuals to collectively care for common goods (Allen/Ostrom 2008: 148). According to Vincent Ostrom, the monocentric order thus appears to reproduce the tragedy of the commons through its monopoly of the use of force and its corrupt and exploitative bureaucratic administration.

Before discussing the Ostroms’ answer to the problems of monocentric orders, I wish to offer a few critical reflections on their depiction of monocentric orders, which is admittedly somewhat simple and problematic. Firstly, it must be emphasized that the notion of a monopoly on coercion appears, at least to me, to

4 The assumption that a monocentric bureaucracy is a threat to individual positive freedom is famously formulated in Tocqueville’s account of “democratic despotism” where he writes: “That power is absolute, minute, regular, provident, and mild. [...] The will of man is not shattered, but softened, bent, and guided; men are seldom forced to act, but they are constantly restrained from acting. Such a power does not destroy, but it prevents existence; it does not tyrannize, but it compresses, enervates, extinguishes, and stupefies a people, till each nation is reduced to nothing better than a flock of timid and industrious animals, of which the government is the shepherd.” (Tocqueville 2004: 861–2) Although the state that Tocqueville is describing is not the same as the one under which Vincent Ostrom lives, Vincent nevertheless repeats this argument throughout his work (e.g. V. Ostrom 1997: 278). In a different form, Claus Offe also presents a similar argument in his essay *Contradictions of the Welfare State* (1985) in which he explains that the socialist left also believes that the welfare state undermines individual self-determination: “The welfare state can be looked upon as an exchange transaction in which material benefits for the needy are traded for their submissive recognition of the ‘moral order’ of the society which generates such needs. One important pre-condition for obtaining services of the welfare state is the ability of the individual to comply with the routines and requirements of welfare bureaucracies and service organizations, an ability which, needless to say, often is inversely correlated to need itself.” (Offe 1985: 156)

be an important means of overcoming conflicts. Monocentric orders provide ways to define rules that limit free riding, enforce sanctions and redistribute scarce resources. Ultimately, these are similar to the mechanisms that Elinor Ostrom describes in her eight design principles for sustainably self-governing commons. Here, the monopoly of force can be understood as a pooling of coercive powers in a certain institutional arrangement. However, the difference between the state and the commons is simply that the state is a much larger institution with longer chains of trust and accountability than the social arrangements that Elinor analyzes. The mere fact that monocentric can be used as a means of tyranny and oppression should not, however, imply that we must entirely reject the concept of a monocentric order. This would be throwing the baby out with the bath water. We have already confronted this problem in Hardin's critique of commons, which turned out to be a critique of unregulated commons. Thus, the question is how the monocentric power of the sovereign can be controlled and how the monopoly on the use of force can be made legitimate and just. The question that is of central importance here is whether the state's rules and its authority are democratically legitimate. Furthermore, the question arises of how bureaucratic administrations should be designed to make them more responsive, effective and accountable. We will return to these questions in more depth later while discussing polycentric orders and the relation between the state and commons. Before that, however, let us turn to the other of the two answers to the tragedy of the commons: privatization and the market.

4.3 The tragedy of privatization and the market

Such criticisms of the state have been very influential, and it has often been said that privatization is a better answer to the tragedy of the commons (e.g. Demsetz 1967). As we have already seen in our discussion of Garrett Hardin's work, the main arguments for privatization are the internalization of costs and thus the correlation of costs and benefits. And as Adam Smith and other economists have argued, competitive market arrangements, in turn, provide us with more responsive and efficient social institutions.

Interestingly, Elinor and Vincent Ostrom do not discuss privatization or the market very much. While Vincent is rather fierce in his critique of the monocentric state, he remains somewhat silent on the problems of the market. In fact, while he speaks of a "moral economy", he simultaneously defends the open and competitive market using arguments similar to those that we have previously discussed (V).

Ostrom 1991: 229–231; V. Ostrom 1997: 107; V. Ostrom 2011a: 191).⁵ In contrast, Elinor does mention the problems of an open and competitive market, though she does so sparingly. To be fair, we can generally assume that this has to do with the historical context of the Cold War they lived and wrote in.⁶ Nevertheless, their empirical and theoretical framework does provide us with some rare insights into the problem of privatization and markets. The reason why I insist on a critique of privatization and markets here is that we must understand why privatization and markets are problematic in more detail in order to justify our defense and development of commons. Conversely, if privatization and markets work well, there is no reason to change their institutional arrangements. As Elinor Ostrom says herself, “If it ain’t broke, don’t fix it” (Ostrom 2008a: 211).

Different Types of Goods (Part I)

Before turning to privatization and the market, it is important to note that Elinor and Vincent Ostrom do not deal with these issues in detail because they often simply assume that public choice theory has already developed a sufficiently clear

5 Here, it can be noted that Vincent Ostrom does not like to use the general terms ‘markets’ and, more importantly, ‘capitalism’. He explains in an interview: “Probably the best way to characterize our approach would be to start with one of our most influential themes: the idea that broad concepts such as ‘markets’ and ‘states,’ or ‘socialism’ and ‘capitalism,’ do not take us very far in thinking about patterns of order in human society. For example, when some ‘market’ economists speak of ‘capitalism,’ they fail to distinguish between an open, competitive market economy and a state-dominated mercantile economy. In this, they follow Marx. He argued that ‘capitalism’ has a competitive dynamic that leads to market domination by a few large monopoly or monopoly-like enterprises. But what Marx called ‘capitalism,’ Adam Smith called ‘mercantilism.’ Similarly, many authors who write about ‘capitalism’ fail to recognize the complexity of capitalist institutions. They overlook the rich structures of communal and public enterprises in societies with open and highly competitive market economies. Instead, we should expect to find some combination of market and non-market structures in every society, and we should recognize the complex configuration of institutions behind labels such as ‘capitalism.’” (V. Ostrom in Aligica/Boettke 2009: 142) It is, however, quite a peculiar and problematic fact about Vincent’s work that while he demands an exact and differentiated analysis of the institutions of markets, he never – at least to my knowledge – provides such a differentiated analysis himself. I do, in fact, hope to develop such a differentiated understanding of markets in this book.

6 In an interview, Elinor Ostrom was once asked “Do you take issue with those who call your theories ‘implicitly socialistic?’” Her answer to this question was: “Yes. I don’t think they are supporting socialism as a top-down theory. A lot of socialist governments are very much top down and I think my theory does challenge that any top-down government, whether on the right or the left, is unlikely to be able to solve many of the problems of resource sustainability in the world.” (E. Ostrom in Klein et al. 2013: 541)

categorization of goods, including private goods (Buchanan 1965). In distinguishing between goods, they emphasize two essential characteristics: exclusion and rivalry. In contrast to widespread theories on goods, Elinor and Vincent Ostrom, however, replace rivalry with joint use (Ostrom/Ostrom 1999: 78). The divisibility of goods creates the possibility of excluding others from their use, ultimately enabling a specific good or service to be privatized and traded as a commodity on the market. Access to such a good is only allowed when the terms and conditions of the vendor are met (ibid.: 76). In other words, access to these goods depends on a person's purchasing power or, in more plain language, on how much money a person has. In the case of goods that cannot be divided up or where this is more difficult, with things such as the air or peace, exclusion can generally not be realized. Here, "anyone can derive benefits from the good so long as nature or the efforts of others supply it" (ibid.). Joint use, on the other hand, implies that more than one person can consume a good simultaneously. Typical examples of such a good are a movie theater or a lighthouse. Goods that generally do not enable joint consumption are, for example, an apple or a fish. These goods are, in contrast, considered to be rival. If one person eats the fish, another person cannot eat it. Such goods are subtractive and therefore considered to be scarce and thus rival. These distinguishing characteristics of exclusion and joint use have led the Ostroms and other public choice theorists to differentiate between individual private goods, collective private goods or club goods, common pool resources and public goods. The following table sets out the four types of goods:

Table 1: Types of goods (Ostrom/Ostrom 1999: 78)

	Rival	Non-Rival/Joint Use
Exclusion Feasible	<u>Private Goods:</u> Bread, shoes, automobiles, haircuts, books, etc.	<u>Toll Goods:</u> Theaters, night clubs, telephone service, toll roads, cable TV, electric power, library, etc.
Exclusion Difficult/Infeasible	<u>Common-Pool Resources:</u> Water pumped from a ground-water basin, fish taken from an ocean, crude oil extracted from an oil pool	<u>Public Goods:</u> Peace and security of a community, national defense, mosquito abatement, air pollution control, fire protection, streets, weather forecasts, public TV, etc.

Here, it is important to note that common pool resources are similar to public goods because it is relatively difficult (i.e. costly) in both cases to exclude others from their use. Yet, in contrast to public goods, common pool resources can provide individuals with goods that can be consumed individually (e.g. a fish from an

ocean).⁷ In a similar manner, individual private goods can be distinguished from collective private or toll goods in that both types of goods enable exclusion while the former good is a rival good and the latter is – at least in principle – non-rival.

Although this schematic categorization of goods is helpful in differentiating between types of goods, Vincent Ostrom emphasizes that there are a few respects in which it is somewhat problematic. Firstly, few if any goods perfectly fit this categorization except for a few trivial and ideal cases such as gravity (V. Ostrom 1975: 847). In a similar sense, the possibility of joint consumption depends on the precise conditions of use. A public highway can, for example, become rival and a public ‘bad’ when over-used. Additionally, the schematic representation of goods fails to recognize that the differences between goods lie on a continuum. And lastly, it neglects the relationships that exist between goods of various types (e.g. the relationship between automobiles and the public highway). Vincent therefore explains that “within this continuum, the production or consumption of goods or services may involve *spillover effects* or *externalities*” (V. Ostrom 2011a: 190; original emphasis). In other words, the use of one type of good will most likely have positive or negative effects on other goods owing to their interdependence (e.g. the positive effects of education on a broader population and the negative effects of pollution on water quality). The interrelatedness of different goods therefore demands different access and utilization rules depending on the positive and negative effects of these goods. Also, these access and utilization rules are not simply given; they are highly contested.

Furthermore, it must be noted that this framework simply assumes that specific types of goods inherently or ‘naturally’ possess certain characteristics, which, in turn, means that they are more adequately dealt with as private, club, common or public goods. But as Elinor Ostrom and Charlotte Hess argue, “Common pool resources may be owned by national, regional, or local governments; by communal groups; by private individuals or corporations; or used as open access resources by whomever can gain access.” (E. Ostrom/Hess 2010: 58) Ostrom and Hess emphasize, therefore, that “there is no automatic association of common-pool resources with common property regimes – or, with any other particular type of property regime”

7 The concept of common pool resources is explained in a bit more detail in a longer passage by Elinor and Vincent Ostrom: “In the case of a common-pool resource, exclusion may be infeasible in the sense that many users cannot be denied access. But, use by any one user precludes use of some fixed quantity of a good by other users. Each pumper in a groundwater basin, for example, makes a use of water that is alternative to its use by each other pumper. Each fish or ton of fish taken by any one fisherman prevents any other fisherman from taking those same fish. Yet no basis exists for excluding fishermen from access to fish in an ocean. Once appropriated from a natural supply, water can be dealt with as a toll good to be supplied to those who have access to a distribution system; similarly, once taken from the ocean, fish can be dealt with as a private good.” (Ostrom/Ostrom 1999: 78)

(ibid.; original emphasis). In other words, it can be assumed, at least theoretically, that all goods could be privatized if purchasing power and the demand for a good increased while new technologies were to reduce the costs of exclusion (Engel 2002: 52; Euler 2018). Just as a few centuries ago it might have seemed absurd to imagine that water might be bottled and become an object of mass consumption, it is just as possible that fresh air will be bottled and sold one day. We can thus conclude with Tyler Cowen that the “costliness of exclusion is not a function of the nature of the good [itself]” (Cowen 1985: 61). Or, in more general terms, “nearly every good can be classified as either public or private depending upon the institutional framework surrounding the good and the conditions of the good’s production” (ibid.: 53). For this reason, it is necessary to investigate whether the Ostroms provide us with arguments for or against organizing specific resources in private or common property arrangements.

Market failure and privatization

It is important to emphasize that neither Elinor nor Vincent understands the tragedy of the commons to be the result of a common pool resource itself or of a common property regime. Rather, they understand the tragedy to be the consequence of specific institutional arrangements that enable people to act in a specific manner in relation to specific goods. In this sense, the unhindered individualistic freedom that Hardin describes in his model is not to be understood as a type of freedom in a state of nature, but rather as freedom that has been created through a public good: the legal framework implicit in Hardin’s imagined scenario (V. Ostrom 1993: 62; V. Ostrom 1999: 62). More specifically, Hardin assumes a legal framework that protects specific property and contract rights from arbitrary interference and that allows the unimpeded and unlimited accumulation of resources. In Elinor’s words, “The Hobbesian state of nature is logically equivalent to a situation in which rules exist permitting anyone to take any and all desired actions, regardless of the effects on others.” (E. Ostrom 2008a: 140) According to Vincent, this type of individualistic freedom and choice is not simply a characteristic of open-access common pool resources, but also a characteristic of the market (V. Ostrom 1974: 56). Furthermore, it is this individualistic choice that leads to the aforementioned spillover effects and externality problems. As Vincent explains:

When individuals act with the legal independence characteristic of decision making in market structures in a situation dominated by externalities, common-pool resources, or public goods, we can conclude that *institutional weakness* or *institutional failure* will occur. The magnitude of the weakness or failure will depend upon the importance of the externality, or the degree of indivisibility occurring in the common property or public good. (V. Ostrom 2011a: 193; original emphasis)

Here, tragedy arises when individual freedom affects other goods and third parties in the form of negative externalities, free riding or unlimited appropriation of common resources or public goods. Vincent refers to this problem as a form of “institutional weakness or failure”. The failure he refers to can be interpreted as what is generally called market failure. In turn, Elinor Ostrom defines market failure in a similar yet slightly different manner:

Market failure means that the incentives facing individuals in a situation, where the rules are those of a competitive market but the goods do not have the characteristics of ‘private goods,’ are insufficient to motivate individuals to produce, allocate, and consume these goods at an optimal level. (E. Ostrom 2005a: 23)

Although the acknowledgment of the problem of market failure is quite widespread, it should not be interpreted as a critique of privatization and markets *per se* but rather, as in Vincent’s argument on this point, as the “failure” of certain goods to be divided up and privatized. As Elizabeth Anderson remarks, correctly, “The theory of market failure is not a theory of what is wrong with markets, but of what goes wrong when markets are not available: it is a theory of what goes wrong when goods are not commodified.” (Anderson 1993: 192) The point is that the problem of externalities is often understood as an institutional weakness of common pool resources and public goods – and not as a problem of private property and markets.

This is a very prevalent argument that is especially brought up in relation to environmental problems such as pollution.⁸ For example, Arrow and Hahn argue in their book *General Competitive Analysis* (Arrow/Hahn 1971: 186) that a “competitive equilibrium” in allocation – and thus certainly no market failure – exists when literally *everything* is clearly defined and delineated as privatized commodities.⁹ This assumption is far-reaching and would imply the comprehensive commodification

8 Here is merely one example: “There is good reason, however, to believe that a genuinely free market economy would actually minimise negative externalities. A free market is not a free-for-all, but a system of private property rights enforced by law. Negative externalities without the possibility of amelioration can only arise where private property rights do not (or cannot) exist. [...] While there may be some externalities that cannot be made good via the enforcement of private property rights (principally because private property rights cannot be created or enforced), the presence of negative externalities should properly lead to an investigation to see how private property rights can be further extended, rather than an abandonment of the free market system.” (Meadowcraft 2004)

9 Arrow and Hahn write: “The implications of these conclusions [...] suggest that under appropriate hypotheses, especially convexity and the presence of all markets (*absence of externalities*), competitive equilibrium is very sturdy. There is no strong incentive for subgroups to try to coalesce and to achieve more than they could in the competitive equilibrium; for any such attempt would be unstable. This is contrary to the view sometimes expressed that competitive equilibrium has an inherent instability in that it would pay, for example, the owners of

of all things, including not only common-pool resources such as air, water, forests, pastures and ecosystems, but also ‘things’ like a recipe, the enjoyment of a sunset, every sexual act, every moment in which children are cared for and, theoretically, also all streets, all laws, all form of police protection and the state itself.

To be clear, it would be completely wrong to argue that Elinor and Vincent Ostrom defend this position. They worked throughout their lives to develop a better understanding of how commons and common property arrangements can be democratically governed. But the question arises whether the Ostroms provide arguments against this (implicit) demand to privatize all of life. Generally, their only arguments against privatization are the ones that result from their previously mentioned categorization of goods. As in her 1990 book *Governing the Commons* Elinor briefly discusses privatization. Here, she basically argues that privatization is undesirable because it increases the costs of property protection, monitoring and sanctioning (E. Ostrom 2008a: 12). She writes: “The setup costs for a new market or a new insurance scheme would be substantial and will not be needed so long as the herders share fodder and risk by jointly sharing a larger grazing area.” (ibid.: 13) According to Elinor, an increase in costs makes it unlikely that shared land will be privatized. Furthermore, she argues that common pool resources such as pastures are supposedly relatively difficult to (fairly) parcel up because of the highly unequal structure of the landscape. According to Elinor, this would make privatization undesirable. In the case of fisheries, she also argues that the fishes’ migrations make it “likely” that fisheries would “be owned in common rather than individually” (ibid.: 13). However, these arguments against privatization are simply based on the functional description of goods and their monetary utility. As we can see, we may search in vain for robust normative arguments against privatization in the work of the Ostroms.

In this sense, a more fundamental question that arises now is not only if privatization is possible (i.e. costly), but whether it is normatively desirable. What is neglected, here, is the simple insight that privatization and commodification fundamentally transform people’s relationships with each other and the world (e.g. paid sex versus unpaid sex between people) and exclude people from resources essential to their life and liberty (e.g. water, land, housing etc.). For example, by enabling someone to appropriate and accumulate land without limit, other people will be excluded from the chance to access land. I believe this to be the main, simple and general argument *against* privatization. The position that I defend in this work and that I will elaborate on in more detail later is that people require access to common resources as a prerequisite for life and liberty. While individual private property might be necessary for the fulfillment of certain personal needs, an access

some one commodity to form a cartel and exploit their monopoly power.” (Arrow/Hahn 1971: 186; emphasis added)

to democratically managed common property provides people with greater individual freedom in joint activities while simultaneously minimizing their ecological impact. Put somewhat differently, commons increase our autonomy, defined as the ability to codetermine our social conditions, and simultaneously provide us with a democratic means of creating abundance through the fairer distribution of goods in a world of limited resources. In turn, I believe this to be the main argument for a commons-based society.

Strikingly, Elinor and Vincent Ostrom's work lacks such an explicit critique of privatization and a clear normative defense of commons. As I have mentioned, it would be false to argue that Elinor or Vincent Ostrom defend privatization; but with the scant and somewhat misleading critique of market failure, the door is left wide open to privatization.¹⁰ To be fair, we could say that as political scientists, it was not their job to provide a normative defense of commons – they simply provided examples to demonstrate that commons can be democratically and sustainably managed. But before turning to their analysis of commons, let us push this argument further and investigate the subsequent problems that result from private property in competitive markets.

The tragedy of the market

Despite the lack of an explicit critique of privatization, Elinor Ostrom does in fact provide another rather slender but insightful criticism of markets that will help us in our general analysis of the relationships between markets, democracy and commons.

In *Governing the Commons*, Elinor mentions that privatization transforms the relationship that human beings have with nature. After privatization, she explains, “each herder will be playing a *game against nature* in a smaller terrain, rather than a game against another player in a larger terrain” (E. Ostrom 2008a: 12; original emphasis). She then declares that the reason for this “game against nature” is a “result of [the individual producer's] own profit incentive” (ibid.: 13). Here, we are confronted with a certain contradiction in property theory. On the one hand, it is often assumed that privatization leads to a more responsible and sustainable management of a specific resource owing to the correlation between costs and benefits. On the other hand, it is also assumed that people will use their resources more usefully or, rather, more productively and profitably. We will discuss this argument in further detail when we discuss Locke's justification of private property. For now, however, it is interesting to note that Elinor appears to claim that sustainability

¹⁰ For a (neo)liberal market-oriented (re)interpretation of Elinor Ostrom's work see, for example, Mark Pennington's article in *Elinor Ostrom, common-pool resources and the classical liberal tradition* (2012).

and profit contradict each other and that the problems of overuse and degradation remain present even if the specific resource is privately owned.

On the one hand, we might think that this overuse occurs because people are inherently greedy and short-sighted. This would support the thesis that if people are able to pursue their egotistical interests, then they will seek profits and exploit the resources that sustain their own existence. If this were the case, we could justify a power ‘from without’ that protects people from their own destructive drives. But we will see that this is not the case that Elinor is defending. On the other hand, it could just as easily be assumed that people will manage privately owned resources sustainably in their own long-term self-interests. This could occur when people are relatively informed about the effects of their actions. Yet why would people then nevertheless overuse their privately-owned resources? The reason becomes more apparent when we perceive individuals in their broader social context. In her article “Toward a Behavioral Theory Linking Trust, Reciprocity, and Reputation” (2003), Elinor explains that when privatization is coupled with open and competitive markets, the tragedy is simply repeated at a higher level. She explains: “In highly structured and competitive environments such as an open market [...] entrepreneurs have *no alternative* other than to seek profits. Those who do not pick maximization strategies [...] are *eliminated* by the selective forces of the market.” (E. Ostrom 2003: 25: emphasis added) Much as in Hardin’s portrayal of the tragedy of unregulated commons, Ostrom argues that the open-market arrangement transforms individuals into “determinate, calculating machine[s]” (ibid.) that are caught up in a single-exit or straitjacket situation (ibid.). In order to survive, private property in open competitive markets thus force people to increasingly extract and accumulate resources – irrespective of whether these resources are owned privately or collectively. Aside from these and other fleeting references to the problems of “rent seeking” (E. Ostrom/Hess 2010: 55), “roving bandits” (E. Ostrom 2007: 12) or even “robber barons” (V. Ostrom 2008: 244), I am not aware of any further critical reflections on privatization and markets in the work of Elinor or Vincent Ostrom.

Before continuing, I think it is important to pause for a moment and reflect on this insight of Elinor’s in order to develop my own more elaborate critique of markets here. As we can now see, competitive and maximizing arrangements as described by Elinor are very similar to those described by Adam Smith in which markets discipline people to increase the “wealth of nations”. Firstly, it must be noted that unregulated commons enable the unlimited appropriation and accumulation of resources. Yet, in contrast to Adam Smith’s positive portrayal of wealth generation, we are reminded again that the discipline of open and competitive markets greatly limits and undermines the individual and collective freedom to alter one’s social arrangements. Furthermore, in discussing the tragedy of unregulated commons, we have ironically discovered that open and competitive markets function according to the same paradoxical logic as unregulated, open-access commons:

One's existence is secured through the necessity of appropriating more and more material from a specific resource system, irrespective of whether the system is held in common or treated as individual private property. Both arrangements function according to the logic of 'survival through accumulation'. While Smith describes this process positively, as an increase in economic growth and monetary wealth, the commons perspective conceptualizes the same social arrangement as a tragedy that depletes and overuses people's common resources. Put in this perspective, we might even interpret the tragedy of the commons as the negative flip-side of the perpetual increase in the wealth of nations.

Yet, in contrast to Elinor, I would argue that privatization does not simply replace the "game against another player" with a "game against nature" (E. Ostrom 2008a: 12). Instead, antagonistic and competitive relationships exist in both social arrangements. The reason for this is that both the unregulated commons and the open market are structured according to the prisoner's dilemma or what is also known in economic terminology as the isolation paradox (Sen 1984: 123-4; Elson 1988: 13-20). In both, there exists an institutional setting in which individuals must act *ex post* without prior communication with the other person or knowledge of their intentions and actions. This is what Frank Knight and other economists call "uncertainty" in market situations (Knight 1921). The problem, however, goes beyond the difficulty of merely dealing with unforeseen events such as rainfall or the delivery of a package by post. As we know, the uncertainty of the prisoner's dilemma leads to maximization strategies and the depletion of resources – irrespective of whether these are held in common or owned privately. Hence, the privatization of all goods and resources is unable to overcome ecological problems, because competitive markets force one to extract more and more resources from one's own individual private property, ultimately depleting these resources too. A pertinent example of this is burnout, which can be interpreted as a type of depletion of one's resources in oneself in order to keep up with the other market participants (Rosa 2010). As we see, survival through perpetual accumulation in a world of finite resources is not only logically impossible, but also self-destructive.

Interestingly, this dynamic not only undermines the resources that are privatized and transformed into profit but also destabilizes the market itself. Due to the diversity of people's capabilities and their unequal starting positions, accumulation processes are also highly unequal. Simply put, people with better starting positions can, in turn, accumulate more at a greater rate. This cumulative advantage is often understood as the Matthew principle.¹¹ This implies that the competitive dynamic increases scarcity even more so for those who already have less, accentuating the

¹¹ As Streeck quotes in his book *Buying Time*: "For to all those who have, more will be given, and they will have in abundance; but from those who have nothing, even what they have will be taken away." (Matt. 25,29 in Streeck 2013: 94)

divergence between the haves and have-nots. Those with little purchasing power become increasingly limited in their ability to buy the products that are sold on the market. This is, however, not only problematic for their own access to resources, but also for those producing the goods, for if the products are not bought, profits cannot be made, wages cannot be paid, and people lose jobs. The socio-economic inequality that results from such a divergence thus leads to what is generally known as an economic crisis due to a deficit in demand (Keynes) or over-accumulation (Marx). According to this rather straightforward logic, open and competitive markets inherently lead to economic instability and the destruction of livelihoods. Put somewhat differently, we could even say that the dynamic of the open and competitive market undermines that commons we call the market economy.

Neither ecological devastation nor economic instability would necessarily be a problem if people could solve the problems that result from the open and competitive market. But as we already know, the open and competitive market creates “structural constraints” (J. Cohen 1989: 28) or a “straitjacket situation” (E. Ostrom 2003: 25), which impedes people’s ability to alter their social institutions. We already have discussed this problem in relation to the tension between the *Staatsvolk* and the *Marktvolk*. This problem is, however, exacerbated by the maximization dynamic of the competitive market. If one producer increases its rate of production, all must follow suit in order to maintain their competitive edge. Thus, in order to survive on the market, agents must increase not only the *amount* but also the *rate* of appropriation and output. This is normally understood as producing efficiency gains through rationalization processes and is one of the main justifications of a competitive market economy. The sociologist Hartmut Rosa (2013) describes this process as one of perpetual social acceleration, which might increase economic output, yet does not necessarily increase people’s freedom and wellbeing. Importantly, this increased socio-economic acceleration also conflicts with the processes of democratic deliberation and governance. As he explains:

The central specifically temporal difficulty of democratic politics proves to be the fact that a participatory and deliberative will formation that includes a broad democratic public is capable of being accelerated only to a very limited extent and under specific social conditions. The aggregation and articulation of collective interests and their implementation in democratic decision making has been and remains time intensive. For this reason, democratic politics is very much exposed to the danger of desynchronization in the face of more acceleratable social and economic developments. (ibid.: 254)

We can thus understand this desynchronization as a divergence of the high speed socio-economic processes, on the one hand, and the time necessary for democratic practices, on the other. This incongruence leads to political action lagging behind economic developments. Importantly, it implies that “politics loses its role as an

influential actor that shapes the playing field itself and takes on the status of a predominantly *reactive* fellow player of the game" (ibid.: 264; original emphasis). Here, democratic politics is again dethroned, yet not by economist kings or a *Marktvolk*, but rather by the maximization dynamics of the market itself. Similar to the previously discussed structural constraints, this necessity to perpetually accelerate can thus also be perceived and understood as a function of natural or "objective forces" (ibid: 269) that limit political deliberation and action. Again, we are confronted with a mechanism of the open and competitive market that thwarts people's collective attempts to solve the problems that the socially constructed market institutions themselves bring about.

As we see, the isolation paradox that underlies open and competitive markets brings about numerous problems and mechanisms that limit democratic change and institutional problem solving. As Amartya Sen explains: "The market mechanism on its own confines its attention only to issues of congruence, leaving the interest conflicts [and social problems] unaddressed."¹² (Sen 1984: 95) Along those lines, I would argue that by neglecting or suppressing conflicts through individual private property, market exchange, competition and the belief in perpetual accumulation and economic growth, conflicts and tragedies will inevitably erupt elsewhere. As we have just discussed, these tragedies can involve economic degradation, pollution and climate change, local and global social inequalities and economic crises. Here, I would agree with James Tully who conceptualizes these injustices with the help of what he calls the Medea Hypothesis, "that is, like Medea killing her own children, humanity's current way of life is bringing about the destruction of the life conditions of future generations" (Tully 2013a: 3). On top of this, the democratic deficit resulting from a state-market dichotomy hinders people from institutionally dealing with these antagonistic interests and grave socio-

¹² Hayek admits that markets do not actually deal with these conflicting values, but that they instead merely provide a method for agreeing on the means of obtaining different and conflicting ends. Hayek writes: "Among the members of a Great Society who mostly do not know each other, there will exist no *agreement on the relative importance of their respective ends*. There would exist not harmony but *open conflict of interests* if agreement were necessary as to which particular interests should be given preference over others. What makes agreement and peace in such a society possible is that the individuals are not required to agree on ends but only on means which are capable of serving a great variety of purposes and which each hopes will assist him in the pursuit of his own purposes." (Hayek 2013: 171-2; emphasis added) Although it might appear that people do not agree on ends in an open, competitive market, I would argue that the ultimate notion that people in capitalist societies must (tacitly) agree on is perpetual and exponential economic growth as a means to deal with the fact that they do not agree on other ultimate notions. Ignoring planetary boundaries, endless growth provides the hope that one day all people will be able to realize their desired ends. Instead of dealing with conflicting values, people in an open and competitive market have thus agreed on economic growth as a social end in itself.

ecological problems. In turn, this is what Tully calls “the tragedy of privatization” and what I would also understand as the tragedy of open and competitive markets (Tully 2013b: 227; Tully 2014: 86). The underlying prisoner’s dilemma of both the unregulated commons and the open and competitive market underlines Charles Lindblom’s notion of the market as a prison that each person is “locked into” (Hardin 1968: 1244; Lindblom 1982). Thus, paraphrasing Hardin we may conclude that in an open and competitive market, every individual is locked into a system that compels them to increase their wealth without limit – in a world that is limited. Ruin is the destination toward which everyone rushes, with everyone pursuing their own best interest in a society that believes in the freedom of the self-regulating market. Unhindered individual freedom in an open and competitive market brings ruin to all. Returning to Elinor Ostrom, we might therefore conclude that although she recognizes the underlying straitjacket maximization logic of the open and competitive market, it appears that she has not followed through with a reflection on its consequences.

To avoid misunderstanding, I would again like to emphasize that my perhaps rather severe-sounding critique of markets is of course not a critique of markets *per se*, but rather of open or rather unregulated, competitive market arrangements. Nevertheless, some may say that this is a highly exaggerated and negative portrayal of markets. To a certain extent, I would agree with that criticism. Fortunately, not all markets function in this manner, as the regulations placed on labor markets and subsidies for farming both go to show. It could even be said that the markets in all goods and services are regulated in some form or another. In this sense, open and competitive markets have been portrayed in an abstract and idealized manner. Nevertheless, the mechanisms behind existing ‘imperfect’ markets still often function according to the dynamics I have just described. Furthermore, the problem that many people – especially in northern Western countries and especially people in upper social strata – are faced with is that the world does not appear to be as bad as I have just described it to be. Under this assumption, we could begin a discussion about whether the glass is half full or half empty. That, however, would be missing the point. The problem is that many of the issues I have discussed are not perceived directly but usually occur somewhere else, be that in poor neighborhoods that one does not live in or in the global South that is hit harder than the North by austerity policies and climate change. More to the point, the positive and negative effects of these maximization strategies are distributed unevenly and unequally throughout a society and between societies. When the negative ones touch us, we often fail to realize that they stem from institutional causes, but rather believe them to be individual problems or natural occurrences.¹³ Thus, while some of

¹³ This thought originally comes from my manuscript editor, Marc Hiatt, who wrote it as a comment when he was proof-reading this manuscript.

us may not be aware of these problems in our day-to-day life, I would nevertheless affirm that the structural logic that lies behind these diverse socio-economic, ecological and political problems is largely due to the institutional arrangements based on privatization and open and competitive markets.

That being said, we can now return to the Ostroms and see what answers to the tragedies of both hierarchical monocentric orders and privatization we can find in their account of democratically governed commons.

4.4 Overcoming tragedy through collective action

In order to conceptualize alternative forms of societal organization, Elinor Ostrom turns to the analysis and reflection of a central assumption of both Garrett Hardin's thesis and economic theory in general: that humans are rational, egotistical utility maximizers. While she questions the universality of complete rationality and rational choice theory, Ostrom insists that she does not present a new, alternative model, but that she merely formulates a number of attributes of human behavior that should be included in future efforts to formalize specific models of agency (Ostrom 2003: 54, 62).

A behavioral theory of bounded rationality and norm-oriented agents

As mentioned above, the tragedy of the commons is based on the prisoner's dilemma, in which agents are conceptualized according to a utilitarian model of complete rationality. The assumptions for such games are that (1) all participants have knowledge of the structure and possible outcomes, (2) the strategies are decided upon independently, and (3) there is no external authority to enforce agreements (ibid.: 23). Elinor lists some reasons for the peculiarity of this model: "no communication among the participants, no previous ties among them, no anticipation of future actions, and no capacity to promise, threaten, cajole, or retaliate" (E. Ostrom 1986: 10). Most importantly, the "only 'choice' available to rational human beings [in this situation is] a 'choice' *within* the constraints of an externally imposed structure" (ibid.: 11; original emphasis). Because people can supposedly only choose within these specific institutional arrangements, individuals are encouraged or forced to act as if they were 'naturally' egotistical utility maximizers. It is in this sense that Elinor denaturalizes both unregulated, open-access common property regimes and, in passing, the open competitive market. In contrast, she understands both the models of the completely rational agent and of the paradigm of the prisoner's dilemma situation to merely be "one model within a family of models [...] [that exists] in highly structured physical and institutional settings" (ibid.: 25).

Given her extensive analysis of vast amounts of empirical research both in the laboratory and in the field, Ostrom is in a position to relativize and reformulate the currently dominant rational-choice theory. Without going into too much detail about the laboratory experiments, it can generally be said that a lot of evidence contradicts the theoretical predictions of dilemmas – and Garrett Hardin's claim that freedom in a commons inevitably lead to tragedy (E. Ostrom 2003: 24, 27-37). The most important findings made in the laboratory are (1) the initially high yet suboptimal levels of cooperation in most social dilemma games, (2) the positive effect of communication on cooperation and (3) the willingness to invest in solving second-order dilemmas or, rather, in changing the structure of the game itself in order to improve joint benefits (ibid.). Despite these results, Ostrom remarks that some contextual variables (such as length of game, communication and sanctioning possibilities etc.) produce stark variations in levels of cooperation, which remains as the “really big puzzle in the social sciences” (ibid.: 39). In this sense, it could be said that these variances in laboratory settings and game outcomes has led Ostrom to broaden the scope of classical methodological individualism by emphasizing the importance of the social context for individual agency and collective action.¹⁴

It is this variety in the empirical results that has enabled Ostrom to attempt to formulate a behavioral theory of bounded rationality that brings together the constraints of specific contexts and the cognitive limitations of agents. In comparison to the “thin” theory of complete rationality in which humans are “self-interested, short-term maximizers” (E. Ostrom 1998: 2), Ostrom develops a broader, “second-generation” (ibid.: 9) model of bounded or incomplete rationality.

I assume that [humans] seek to improve values of importance to them (including what happens to other individuals who are of concern to them); select actions within interdependent situations in which what they do is affected by their expectations of what others will do; use information about the situation and about the characteristics of others to make decisions; and try to do as well as they can given the constraints they face. In addition, I assume that in the course of their lifetimes individuals learn heuristics, strategies, norms, rules, and how to craft rules. (E. Ostrom 2003: 39-40)

Remaining within a general utilitarian framework, Elinor Ostrom appears to understand human rationality as a means to an end, as an instrument to attain cer-

14 Ostrom writes: “The models of social dilemmas used in laboratory experiments appear to be quite robust. Researchers are able to create and replicate situations in which there is no co-operation, very high levels of cooperation, or moderate levels of cooperation. The amount of control that can be exercised indicates that the experimental models of dilemma situations are quite good. *The model of the individual actor used to explain outcomes appears to be the source of the problem.*” (E. Ostrom 2003: 39; emphasis added)

tain preferences (E. Ostrom 1998, 9). Yet in contrast to a classical rationalist model, however, Elinor does not assume the (short-term) maximization of interests but hypothesizes that people merely desire to improve the things they value. This teleological movement could be understood as a form of meliorism that is common in pragmatist thought (Koopman 2006). Although Ostrom's use of the term "value" is under-defined here, if we consider her critique of a purely economic or monetary understanding of value, it is plausible that her – and Vincent's – understanding of value is plural, conflicting and contingent (Dietz et al. 2003: 1909; V. Ostrom 1984).

It is important to note that this model of bounded rationality emphasizes that the definition and pursuit of these values is embedded in and constrained through the general material and social context. Having been influenced by Herbert Simon, Elinor understands the rationality of an agent to be limited by available resources (such as time and information) that enable people to attain specific ends (Wall 2014: 41-3). Furthermore, she argues that a number of empirical examples demonstrate that humans learn and make use of various heuristics, norms and rules to simplify this cognitive process of information analysis, evaluation and transmission. According to Elinor, instrumental heuristics or "rules of thumb" are created and refined by individuals in recurring situations in order to optimize outcomes. Norms, however, are used as positive and negative "internal valuations [...] that an individual attaches to a particular type of action" (E. Ostrom 2003: 40). Norms are generally learned through socialization and are affected by different situational variables (ibid.: 49). Ostrom understands these internal values as a scale or "delta parameter" (ibid.) that can weigh diverging and conflicting external ends against each other. Although norms are often associated with positive values such as sharing and caring, Ostrom conceptualizes the term more neutrally as encompassing individual orientation systems or societal "focal points" (ibid.: 40) that are created through past experiences and the expected actions of others. She explains,

After experiencing repeated benefits from other people's cooperative actions, an individual may resolve always to initiate cooperation in the future. Alternatively, after many experiences of being the 'sucker' in such situations, an individual may resolve never to initiate unilateral cooperation and to punish noncooperators whenever feasible. (ibid.: 40-41)

As Elinor emphasizes, norms, preferences and values can be changed throughout one's life in response to specific experiences (E. Ostrom 1998: 9). By contrast with unconscious heuristics and internalized tacit norms, rules tend to be self-consciously developed "shared understandings that certain actions in particular situations must, must not, or may be undertaken" (ibid.: 10). It is in this sense that Ostrom understands rationality as being bound, where the choices of means and ends that an agent makes are rarely based on complete knowledge and abstract, absolute principles. Instead, they are constrained by the limited resources

available and strongly influenced by implicit and explicit orientation systems created through human interactions and experiences. By including both situational constraints and societal norms and rules, Elinor Ostrom takes human agency, as methodological individualism conceives of it, and fundamentally transforms it. According to Ostrom's model, our agency is characterized by contingency¹⁵ because it is embedded in the social reality Habermas calls "communicative action" (1981).

The importance of reciprocity, trust and reputations

Ostrom's revision of the theory of human agency has important implications for the overcoming of social dilemmas. To understand the possibilities of creating social conditions for overcoming social dilemmas, she turns to norms of cooperation and reciprocity. According to Ostrom, "reciprocity is viewed by sociologists, social psychologists, and philosophers as one of the basic norms taught in all societies" (E. Ostrom 2003: 42). From an evolutionary perspective, cooperation and reciprocity enhances one's 'fitness' by promoting better outcomes. As a strategy for overcoming social dilemmas, it was in use long before mutual obligations could be enforced by external authorities (E. Ostrom 1998: 10). For this reason, it could even be said that reciprocity has the tendency to be people's dominant norm or default strategy. This hypothesis is supported by numerous laboratory experiments in which people use norms of reciprocity in one-shot, no-communication games and other short-term experimental environments (E. Ostrom 2003: 47-9).¹⁶ Despite this general tendency, Ostrom emphasizes that reciprocity is not biologically inherited. Instead,

individuals inherit a capacity to learn and value algorithms that enhance their capacity to increase their own long-term benefits when confronting multiple social-dilemma situations with others who have learned and value similar norms, even though each situation involves different people, payoffs, and levels of uncertainty. (ibid.: 44)

¹⁵ The contingency of human agency basically implies that the actions of human beings are neither completely predetermined – because chance, spontaneity and imagination open up possibilities for change – nor completely free, because actions are always dependent on specific conditions.

¹⁶ A famous laboratory game that demonstrates this tendency to use reciprocity is the ultimatum game (E. Ostrom 2003: 47-9). In reference to other experiments, Ostrom writes. "The evidence from experiments shows that a substantial proportion of the population drawn on by social science experiments (primarily college students in major universities in the United States, Europe, and Japan) – ranging from 50 to 60 percent – do have sufficient trust that others are reciprocators to cooperate with them even in one-shot, no-communication experiments." (ibid.: 49)

We will discuss the question of reciprocity and human nature in more detail later, but for the time being, it is important to emphasize that because reciprocity is cultivated through processes of socialization, individuals can develop different strategies for dealing with different social dilemmas. While some people learn strategies of reciprocity to overcome these problems in a variety of situations, others learn norms of behavior that are less 'nice' (*ibid.*). This can include either individually egotistical or collective parochial behavior. In this sense, reciprocity norms can also have a dark side. In reference to this problematic finding, Ostrom argues:

Tight circles of individuals who trust one another [and cooperate] may discriminate against others of a different color, religion, or ethnicity to keep them from access to productive opportunities. The focus on the return of favors for favors can also be the foundation of corrupt practices whereby those in official positions do favors for wealthy friends who then return the favors with various forms of financial enrichments. (*ibid.*: 45)

For this reason, reciprocity norms and practices that are inclusive and support basic moral standards must be differentiated from those that are highly exclusive, restrictive and repressive (*ibid.*).

According to Ostrom, central among the situation-internal or endogenous variables in human interactions that enable and strengthen reciprocity are those of trust and reputation. She defines trust as "the [positive] expectation of one person about the actions of others that affects the first person's choice, when an action must be taken before the actions of the others are known" (E. Ostrom 1998: 12). Simply put, I will be nice to you, because I expect you to be nice to me. The existing level of trust is therefore key to determining the first action in a social dilemma because it "affects whether an individual is willing to initiate cooperation in the expectation that it will be reciprocated" (*ibid.*). The existing levels of trust and the first action sets the (normative) stage for future interactions. The hope or expectation that one's cooperation will be returned is, however, not based on naïve altruism but rather on one's own previous experiences and the prevailing social norms, on the one hand, and on the reputation of the other person, on the other. Reputations are important for trust and reciprocity because they give information about an individual's history of overcoming social dilemmas. Or, in other words, reputations tell other people whether someone has been "keeping promises and performing actions with short-term costs but long-term benefits" (E. Ostrom 2003: 43). This, in turn, enables people to "estimate of the risk of extending trust, given the structure of the particular situation" (*ibid.*: 49). A good reputation makes a person trustworthy, implying that one can expect that they will reciprocate cooperative behavior in the future.

For this reason, Ostrom places the relationship between reciprocity, trust and reputation at the center of her understanding of how bounded rational agents over-

come social dilemmas: "At the core of a behavioral explanation are the links between the trust that an individual has in others, the investment others make in trustworthy reputations, and the probability of using reciprocity norms." (E. Ostrom 2003: 49-50) If cultivated, trust, reputations and reciprocity are "valuable assets" (E. Ostrom 1998: 12) that can create a "mutually reinforcing core" (E. Ostrom 2003: 50) and transform Hardin's negative vicious cycle of tragedy into a virtuous cycle of improved joint outcomes, ultimately increasing one's evolutionary fitness (ibid.; E. Ostrom 1998: 12). As has hopefully become evident, these insights into the everyday and microsituational mechanisms of reciprocity, trust and reputation to overcome social dilemmas are fundamental to Ostrom's theoretical development of an alternative to market or state policy prescriptions.

4.5 Self-governing commons with the aid of eight design principles

Despite these positive impacts on peoples' capabilities to cooperate and trust one another, it must be emphasized that Elinor Ostrom's research also reveals the contingency and fragility of these norms and behavioral patterns. This is made clear with her reference to various common-pool situations that were not successful and have failed (E. Ostrom 2008a). For this reason, she shifts her focus from internal and endogenous variables of an interaction situation to external or exogenous, contextual variables in order to understand how social conditions can strengthen these norms and enhance the likelihood that social dilemmas will be overcome. Ostrom's analysis of the effect of institutional structures on human interactions takes first-order dilemmas of reciprocity, trust and reputation and transforms them into second- and third-order public good dilemmas of institutional supply, credible commitment and mutual monitoring (E. Ostrom 2008a: 41-5). Similarly to her findings on trust and reciprocity, while the classical theory of fully rational agents predicts that rule making will not occur because everyone will default to free riding,¹⁷ Ostrom's meta-analysis of laboratory and field experiments reveals that people are actually often willing to invest time and energy into changing rules and institutions in order to secure cooperation and improve joint outcomes.

Before analyzing and discussing these exogenous factors in detail, it should be mentioned that one specific variable can be considered fundamental for overcoming social dilemmas at all levels of interaction: the possibility of communicating

¹⁷ On the problem of second-level dilemmas, Ostrom writes, "Spending time and effort designing rules creates a public good for all involved and is thus a second-level dilemma no more likely to be solved than the original dilemma. This is the foundation for the repeated recommendation that rules must be imposed by external authorities who are also responsible for monitoring and enforcing these rules." (E. Ostrom 1999: 506)

with one another. Although no single variable automatically produces reciprocity norms, face-to-face communication is central for cultivating cooperation and creating institutions. In contrast to the situations of non-communication in Hardin's unregulated commons and the prisoners' dilemma, Ostrom explains:

With a chance to see and talk with others repeatedly, a participant can assess whether he or she trusts others sufficiently to try to reach a simple contingent agreement regarding the level of joint effort and its allocation. Communication thus allows individuals to increase (or decrease) their trust in the reliability of others. (E. Ostrom 2003: 51)

But face-to-face communication not only enables people to access more information about other participants, it also allows them to make promises and agreements in relation to future actions. Furthermore, communication can reinforce prior normative values and facilitate the development of a group identity, which also generally increases mutual trust (ibid.: 33). Thus, the possibility of face-to-face communication must be understood as a key variable in dealing with social dilemmas on different but interrelated levels of action.

Despite this emphasis on the importance of communication for creating robust¹⁸ institutions, communication per se does not solve the problems of supply, commitment and monitoring. In order to understand how these difficulties can be dealt with through communication and rule creation, we must now turn to Ostrom's eight design principles for durable institutions.¹⁹ Beginning with the importance of communication in dealing with multi-level social dilemmas, it makes sense to begin with Ostrom's seventh principle: "minimal recognition of rights to organize" (E. Ostrom 2008a: 90). According to Elinor, this entails "the rights of users to devise their own institutions [that] are not challenged by external governmental authorities" (E. Ostrom 2005a: 259). It is implicit in this principle that users have "long-term tenure rights to the resource" (ibid.).²⁰ These simple yet fundamental

18 The term robust is introduced here because it is a central term for the type of institutions Ostrom intends to help develop. She explains what is normally meant by robust: "[Kenneth] Shepsle considered a system to be robust if it was long-lasting and the operational rules had been devised and modified over time according to a set of collective-choice rules (which themselves might be modified more slowly over time within a set of constitutional-choice rules, which were modified, if at all, very infrequently). The contemporary use of the term robustness in regard to complex systems focuses on adaptability to disturbances: 'the maintenance of some desired system characteristics despite fluctuations in the behaviour of its component parts or its environment' (Carlson and Doyle)." (E. Ostrom 2005a: 258)

19 I will not discuss the eight design principles in the order that Ostrom presents them in, but rather in a sequence that suits the logic of my argumentation.

20 This aspect of the seventh design principle was not included in her 1990 book *Governing the Commons*, but was added in her later book *Understanding Institutional Diversity*, published in 2005.

principles provide people not only with rights of access and use with regard to a given resource, but also with the right to define the institutional framework that regulates it. This enables people to have a long-term interest in the maintenance of the resource and allows communication and self-organizing to take place in the first place.

Given the opportunity to communicate and self-organize, people are also able to define clear boundaries for those with rights to access and utilize the resource (design principle 1).²¹ This is an important step that transforms open, unregulated commons threatened by overuse into closed and regulated commons (E. Ostrom 2008a: 90-1). The first set of rules to be defined can be located on the constitutional-choice level. Choosing a constitution means determining “the specific rules to be used in crafting the set of collective-choice rules that in turn affect the set of operational rules” (*ibid.*: 52). At the next step, “collective-choice arrangements” and the policy rules of “how a CPR [common pool resource] should be managed” (*ibid.*) are defined (design principle 3). People are then able to create operational rules that regulate the day-to-day use of the resource according to local conditions and the different inputs and needs of the people involved (design principle 2). According to Ostrom, it is especially important here to note a “proportional equivalence between benefits and costs” (E. Ostrom 2005a: 262). This supposedly implies that “when the rules related to the distribution of benefits are made broadly consistent with the distribution of costs, participants are more willing to pitch in to keep a resource well maintained and sustainable” (*ibid.*: 263). In simpler terms, fair rules are important for maintaining trust and reciprocity, on the one hand, and to uphold stable institutions and the sustainable use of resources, on the other.

Although the constitutional-, collective- and operational-choice levels of rules and rule-making are analytically differentiated here, Ostrom notes that self-organizing and self-governing people in field settings “go back and forth across levels as a key strategy for solving problems” (E. Ostrom 2008a: 54). In relation to all three levels of rule-making, it can generally be said that when most of the individuals who have an interest in a particular resource are able to continually configure and modify their own rules, these rules are then more likely to better suit local environmental conditions and the interested individuals’ needs. Furthermore, such participation not only limits elites’ ability to create institutions that only benefit themselves, but it also empowers individuals to coproduce rules and public goods

²¹ The definition of clear boundaries of a common pool resource is necessary, according to Elinor Ostrom, when the resource units consumed are rival or subtractive goods. In comparison to non-rival or non-subtractable goods such as information that can be organized as open-access regimes, the scarcity and subtractibility of goods makes it necessary to regulate the appropriation and consumption thereof. According to Ostrom, this distinction between common property and open-access regimes is crucial (E. Ostrom 2008a: 91-2; E. Ostrom 2010: 642, 644).

that are more likely to be considered fair, adhered to and fostered (E. Ostrom 2005a: 263).

Having discussed the general principles for the design of institutions, we must now turn our attention to the problem of adherence to these rules. Although the creation of fair and suitable institutions by those with an interest in the resource strongly increases the likelihood that people will commit to adhering to the rules, the fragility of reciprocity and trust implies that shared norms are not sufficient for maintaining cooperation and improved joint outcomes. To strengthen one's trust that one is not being taken advantage of, rule infraction and free riding must additionally be controlled and limited through certain forms of monitoring, sanctioning and other conflict-resolution mechanisms. While Hardin and many others believe that only external coercion can solve the problem of rule violation, Ostrom believes this solution to be a sleight of hand because it does not address the costs and motivations of the external enforcer (E. Ostrom 2008a: 44, 96). Although external enforcers can, in certain cases, be useful and necessary, she argues that in order to solve the commitment problem, interested individuals have to "motivate *themselves* (or their agents) to monitor activities and be willing to impose sanctions" (ibid.: 44; emphasis added). The adherence problem thus boils down to a problem of the willingness of interested individuals to adhere to collectively self-determined rules – and to the assurance that others will also act accordingly. For this reason, the adherence problem is inherently interwoven with the monitoring problem.

Monitoring generally implies that resource conditions and harvesting activities are visible and checked on. Ostrom's research on durable resource regimes has shown that monitoring works well if the monitors are appropriators themselves or are elected by and accountable to appropriators (design principle 4) (E. Ostrom 2005a: 265). In some cases, mutual monitoring simply occurs as a "natural by-product of using the commons" (E. Ostrom 2008a: 96). In cases where local monitors are elected, these officials are, in turn, often also monitored by the appropriators who are usually those who initially elected their officials. The redundancy in this system of mutual monitoring is a central strategy to minimize the '*quis custodiet ipsos custodes?*' problem that Hardin formulates for what he understands as "socialism." Furthermore, the attractiveness of formal and informal mutual monitoring by appropriators is increased – besides gains in status, prestige and other small material rewards from sanctioning – by access to valuable information concerning the resource and compliance rates for future strategic decisions (ibid.: 97). Although mutual monitoring can easily be considered highly inefficient because of its redundancy, research shows that it is actually an effective and low-cost mechanism to strengthen mutual trust and maintain higher joint outcomes.

For monitoring to have any effect on trust and compliance, however, it must be coupled with mechanisms for applying sanctions (E. Ostrom 2005a: 266-7). Sanctions can be applied either by the appropriators themselves or by officials account-

able to them – or by both (E. Ostrom 2008a: 90). Contrary to general assumptions that trust and compliance are maintained through harsh punishments,²² Ostrom's research demonstrates that graduated sanctions are both less costly and more effective than initial major fines (design principle 5) (ibid.: 98). She writes that "in many self-organized systems, the first sanction imposed by a local monitor is so low as to have *no* impact on the expected benefit-cost ratio of breaking local rules (given the substantial temptations frequently involved)" (E. Ostrom 2005a: 266; original emphasis). In many cases, the initial sanction that is 'imposed' is when the monitor merely informs both the person (and possibly the community) that they were caught violating the rules (ibid.). These low-cost sanctions have an impact because they are a subtle form of public shaming and damage the reputation and trustworthiness of the individual. This threatens the individual's social status and evolutionary 'fitness' because other people may – in a "tit-for-tat" or "measured reaction" (E. Ostrom 2003: 42, 52-3) – stop cooperating with this person, which, in turn, produces an incentive to quickly return to a more cooperative strategy.²³ Ostrom explains, however, that the more serious problem of repeated rule infractions is often dealt with by escalating sanctions because it "enables such a regime to warn members that if they do not conform, they will have to pay ever higher sanctions and may eventually be forced to leave the community" (E. Ostrom 2005a: 267).

With reference to Margaret Levi, Ostrom explains that monitoring and escalating punishment strategies create a regime of "quasi-voluntary compliance". Here, cooperation is initially voluntary because if non-cooperation arises, it will be subject to coercion (E. Ostrom 2008a: 94-5). More importantly, it must be noted that these strategies generally maintain or increase levels of quasi-voluntary compliance and trust among appropriators so that – and contrary to Hardin's assumption – one-hundred-percent compliance is not necessary. In relation to endogenous factors, Ostrom writes:

22 In the literature on game theory, the most frequently discussed punishment is the grim trigger. Here, "a participant, once he or she has detected any level of cheating, plays the Nash equilibrium strategy forever" (E. Ostrom 2003: 52). The problem with the grim trigger, however, is that it "immediately could lead to the rapid unravelling of the agreement and the loss of substantial benefits over time" (ibid.: 53). Although it is often assumed that the grim trigger is normally used in social interactions as an ultimate threat to secure rule conformity, research on game theory provides a different picture: "Few subjects use grim triggers, however, in experimental contexts." (ibid.: 52)

23 Elinor explains that the most common – or most famous – reaction to non-cooperation is the tit-for-tat reciprocal strategy. This mechanism can be defined as "reciprocate first, and then do whatever the others did the last round" (E. Ostrom 2003: 42). It appears that this tactic is also utilized in most field experiments to punish the rule violator for a specific negative action. Yet, in comparison to the unforgiving grim-trigger strategy, the offender receives the chance to change their strategy and return to cooperation and improved joint outcomes without further sanctions.

If only a small deviation occurs, the cooperation of most participants is already generating positive returns. By keeping one's own reaction close to the agreement, one keeps up one's own reputation for cooperation and makes it easier to restore full conformance because cooperation levels are higher. (E. Ostrom 2003: 53)

For this reason, contingent self-commitment²⁴ does not trigger a race to the bottom or a relentless process of over-use and free riding when others break with the agreement (E. Ostrom 2008a: 97-8). In turn, the exogenous variables of local mutual monitoring and graduated sanctioning can assure appropriators of the fact that the conformance of others to the rules is being supervised. This can then increase levels of trust and enables appropriators to "continue their own cooperation without constant fear that others are taking advantage of them" (E. Ostrom 2005a: 265). Furthermore, it must also be emphasized that, in comparison to external surveillance and coercion, quasi-voluntary compliance through mutual monitoring and graduated sanctioning can effectively increase trust, reciprocity and commitment at extremely low costs.

Ostrom also mentions the importance of conflict-resolution mechanisms for strengthening the reinforcing relationship between rule creation, contingent commitment and mutual monitoring (design principle 6). Conflict-resolution mechanisms generally imply that "appropriators and their officials [should] have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials" (E. Ostrom 2008a: 90). The reason why such mechanisms are helpful is because – unlike physical constraints – "rules [...] have to be understood in order to be effective" (E. Ostrom 2005a: 267). In other words, even when appropriators have defined the rules themselves, the interpretation and administration of social rules is always ambiguous and can therefore easily lead to conflicts (E. Ostrom 2008a: 100). Due to this inherent ambiguity, there must be local arenas and simple mechanisms that enable people to discuss and resolve the precise definitions of rule violation in different cases (*ibid.*). Although Ostrom emphasizes the importance of local and sometimes quite informal techniques for dealing with conflict, she also stresses the necessity of well-developed court mechanisms above the level of the local resource. Having arenas for dispute resolution at higher institutional levels is, for example, especially important in reducing the problem of elite capture. Even though such forums do not guarantee cooperation and the maintenance of robust institutions, Ostrom considers it unlikely that robust institutions

24 Ostrom explains that contingent self-commitment implies the following type of pledge: "I commit myself to follow the set of rules we have devised in all instances except dire emergencies if the rest of those affected make a similar commitment and act accordingly." (E. Ostrom 2008a: 99-100) In this context, contingent means that the individual will adhere to the rules as long as (most) others also do. This type of contingent self-commitment resembles the tit-for-tat strategy of norm reciprocity.

can exist over long periods of time without such institutional arrangements (ibid.: 101). Generally, it can be said that the ability to deliberate on and deal with conflicts in a simple and uncostly manner can increase the levels of rule adherence and trust within a specific community (E. Ostrom 2005a: 268).

Aside from these seven design principles, Ostrom adds a final eighth principle to the list: nested enterprises. This principle is of importance for common pool resources that are either relatively large or parts of larger resource systems. We will now discuss this eighth design principle in relation to Ostrom's more general understanding of polycentric governance systems.

4.6 Institutional diversity and polycentricity

The design principles I have discussed are explications of the exogenous, institutional variables that can strengthen the endogenous variables of reciprocity, trust and reputation in order to overcome social dilemmas. It was shown that first-, second- and third-order social dilemmas can be solved in a mutually reinforcing manner (E. Ostrom 2005a: 267; E. Ostrom 2008a: 100). Now, we will turn to the broader and more general implications of these results for the understanding of institutional design, democratic theory and ecological sustainability.

Firstly, the results of Ostrom's extensive meta-analysis of various common property resources has shown that it is possible for individuals and communities who are confronted with social dilemmas to change the very institutional structure that they find themselves in and limit or even eliminate overuse and free riding. This finding is extremely significant because it demonstrates that people can solve "tragedies of the commons" without resorting to the classical – and sometimes rather problematic – models of privatization or centralized state coercion. Formulated more fundamentally, the research on social dilemmas "demonstrates [...] a world of possibility rather than one of necessity" (E. Ostrom 2003: 62). For this reason, Ostrom explains that it is not commoners but rather academics who appear to be trapped in tragedy: "Instead of the users of a commons being inexorably trapped in a tragedy, it is the scholars who have allowed their assumptions to trap them into a presumption that short-run tendencies will necessarily prevail in the long run." (E. Ostrom 1986: 26) Despite this positive finding, her research also shows that people do not always choose a better joint outcome whenever possible. As many other examples of depleted common pool resources that Ostrom discusses show that "establishing a *possibility* is not the same as establishing *necessity*" (E. Ostrom 1986, 25; original emphasis). This generally implies that trust, reciprocity and collective action are extremely delicate matters and require institutional structures that are adapted to the relevant social and material conditions.

Aside from formulating this new perspective for solving commons dilemmas, Ostrom's work has also challenged the classical dualistic concept of founding a social contract and subsequent institutional change. An important insight that Ostrom provides with her empirical case studies is that there is no "state of nature" entirely lacking in institutional structure (E. Ostrom 2008a: 140). This implies that human interaction is always embedded in institutions²⁵ and that no fundamental difference exists between an "original" social contract and the change of institutions²⁶: "Once one assumes that all recurring situations are characterized by a set of status quo rules, then it is possible to broaden the concept of institutional supply to include both what can be called the 'origin' of new institutions and the changing of existing institutions." (ibid.: 140) Contrary to most contractarian philosophers who categorically distinguish between a state of nature and civilized society, firstly, this conceptualization of human interactions and institutions enables Ostrom, as already mentioned, to understand the tendency for humans to act as egotistical utility maximizers as a product of specific institutional arrangements. Simply put, Ostrom denaturalizes the idea of the atomistic individual. Secondly, she formulates a single theory of institutional origin and reform for operational-, collective- and constitutional-choice levels of decision making, in which change is a continual "sequential and incremental process" (ibid.: 141).

A third important implication of her work is that she places the micro-situational institutions governing smaller-scale common pool resources in a broader context of nested and multi-leveled polycentric institutions. In relation to her understanding of institutional change on different levels of choice within institutions, Ostrom explains that accumulated social and "institutional capital"²⁷ can then be

25 Elinor defines institutions in the following manner: "Institutions' can be defined as the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions. All rules contain prescriptions that forbid, permit, or require some action or outcome." (E. Ostrom 2008a: 51)

26 Elinor defines institutional change as "a change in any rule affecting the set of participants, the set of strategies available to participants, the control they have over outcomes, the information they have, or the payoffs is an institutional change" (E. Ostrom 2008a: 140).

27 Although Elinor never precisely defines the term "institutional capital," she uses it numerous times in her writing. Generally, it appears to imply the functioning of institutions that has evolved and developed through the adaptation of the system to solve certain problems – whether biophysical or social. Institutional capital also implies the developed habits and acquired knowledge of the people who build and maintain their own institutional systems. Ostrom writes: "Current theories of collective action do not stress the process of accretion of institutional capital. Thus, one problem in using them [traditional theories of collective action] as foundations for policy analysis is that they do not focus on the incremental self-transformations that frequently are involved in the process of supplying institutions. Learning is an incremental, self-transforming process." (E. Ostrom 2008a: 190) Elsewhere, she explains:

utilized for governance on higher levels of scale: "Success in starting small-scale initial institutions enables a group of individuals to build on the social capital [of trust, reputation and reciprocity] thus created to solve larger problems with larger and more complex institutional arrangements." (ibid.: 190) In an article for the United Nations Rio+20 summit that she wrote shortly before her death in 2012, she explains the general importance of locally-governed institutions in a polycentric system for environmental sustainability:

No one knows for sure what will work, so it is important to build a system that can evolve and adapt rapidly. Decades of research demonstrate that a variety of overlapping policies at city, subnational, national, and international levels is more likely to succeed than are single, overarching binding agreements. Such an evolutionary approach to policy provides essential safety nets should one or more policies fail. [...] Sustainability at local and national levels must add up to global sustainability. This idea must form the bedrock of national economies and constitute the fabric of our societies. The goal now must be to build sustainability into the DNA of our globally interconnected society. (E. Ostrom 2012)

While we have previously mentioned that Elinor Ostrom emphasized that one single model does not fit all situations, she clearly advocates a specific direction in which political development should move: the strengthening of bottom-up initiatives and self-transformative processes to deal with global issues of sustainability.

Although some of the advantages of decentralized, participatory governance in polycentric systems have already been mentioned, I would like to briefly summarize them. Firstly, local and disaggregated knowledge of both the existing social values and norms and of the biophysical system and its changes can be used to create rules that are better adapted to local conditions. Second, the creation of suitable, legitimate rules that foster trust and reciprocity increases rates of conformity with the rules and decreases the costs of monitoring and sanctioning. Finally, the existence of parallel autonomous systems reduces the probability of immense failure spanning larger regions (E. Ostrom 2005a: 281-2). Even though it is often believed that institutions which are "complex, redundant, and nested in many layers" (Dietz et al. 2003: 1910) are inefficient, Ostrom's research shows that such decentralized and participatory forms of governance can, in fact, be quite effective in dealing with social dilemmas and tragedies – and therefore in realizing positive joint outcomes.

For these reasons, both Elinor and Vincent Ostrom argue that commons-like institutions should be integrated in the management and provision of public goods.

"Applying models out of range can produce more harm than good. Public policies based on the notion that all CPR appropriators are helpless and must have rules imposed on them can destroy institutional capital that has been accumulated during years of experience in particular locations, as illustrated by the Nova Scotia fishery cases." (ibid.: 184)

This is what they call “coproduction” (E. Ostrom 1996; Parks et al. 1981), which Elinor defines as “the process through which inputs used to produce a good or service are contributed by individuals who are not ‘in’ the same organization” (E. Ostrom 1996: 1073). In comparison to the more widespread public choice theory, the Ostroms do not, however, limit their understanding of coproduction to public-private partnerships in which public goods are outsourced to private corporations. Instead, they argue that coproduction should “cross the great divide” (*ibid.*) between the state and economy and integrate civil society. The aim of this is to create decision-making arenas that unite the possibly conflicting interests of producers, consumers and regulators. Although not explicitly stated, it can be assumed that participation in the production and governance of such goods and services depends on one's degree of affectedness. While the importance of a clearly-defined *demos* is understood as the first design principle of durable, self-governing institutions for common resources, the fundamental problem of how to measure this affectedness and of who shall decide who is affected and can participate is, unfortunately, not dealt with in their work. Nevertheless, by “unlocking public entrepreneurship and public economies” (E. Ostrom 2005b), it is hoped that consumers will be transformed into active citizens. Instead of separating the public from the private, the Ostroms argue that bureaucratic state administration needs to be democratized (V. Ostrom 1974: 111).

However, because decentralized decision-making does have its own weaknesses, Elinor and Vincent Ostrom argue that these institutions must be located within the larger institutional context of a complex polycentric system. The importance of higher-scale institutions becomes apparent when the limits of community governance are discussed. In short, these include: (1) the lack of organization by some appropriators, (2) the failure of some self-organizing efforts, (3) local tyrannies and elite capture, (4) stagnation or the lack of institutional innovation, (5) illegitimate discrimination and exclusion, (6) communities' limited access to scientific information, (7) serious conflict among appropriators and between common pool resource systems, and, most importantly, (8) the inability of small-scale institutions to deal with larger-scale common pool resources (E. Ostrom 2005a: 282).

Due to these limitations, Elinor emphasizes that local self-governed resources must be built into – or nested in – a larger multileveled polycentric governance system. She explains the concept of polycentricity in her book *Understanding Institutional Diversity*:

By polycentric I mean a system where citizens are able to organize not just one but multiple governing authorities at different scales. Each unit exercises considerable independence to make and enforce rules within a circumscribed domain of authority for a specified geographical area. In a polycentric system, some units

are general-purpose governments while others may be highly specialized. Self-organized resource governance systems in such a system may be special districts, private associations, or parts of the local government. These are nested in several levels of general-purpose governments that also provide civil equity, as well as criminal courts. (E. Ostrom 2005a: 283)

The advantage of such a polycentric system is that while users have the authority to define some of the local rules, serious problems such as local tyrannies, corruption and inappropriate discrimination can, in turn, be addressed. According to Elinor, polycentric systems make it possible to deal with such problems through “larger general-purpose governmental units who are responsible for protecting the rights of all citizens and for the oversight of appropriate exercises of authorities within smaller units of government” (ibid.). Another advantage of such nested enterprises is that interaction and the exchange of information over what has worked and what has not can also take place. Finally, and most importantly, a polycentric system strengthens institutional robustness and evolutionary fitness in that if small systems fail, larger systems can pitch in and help, and if larger systems are unstable or break down, the smaller systems can possibly survive and support the reconfiguration of the larger institutions (ibid.).

That being said, Elinor Ostrom acknowledges that polycentric systems are not easy to deal with – neither for affected participants themselves nor for social scientists. A central problem which she recognizes is the serious potential for conflict between different units “at multiple levels due to their interdependence” (ibid.: 286). Although not explicitly stated, this conflict can easily arise from competition between the interdependent social units. While such competition and conflict can lead to violence, according to Ostrom, the conflict can also generate more information for participants to solve the specific problems that are being fought over. For scholars, on the other hand, polycentric systems often look “terribly messy and [are] hard to understand” (ibid.). For this reason, Elinor advises scientists to resist their “love of tidiness” (ibid.) and to “develop better theories of complex adaptive systems focused on overcoming social dilemmas” (ibid.). In relation to the numerous difficulties in dealing with decentralized, participatory governance in polycentric systems, Elinor Ostrom recognizes that “coping with potential tragedies of the commons is never easy and never finished” (ibid.).

4.7 Interim conclusion

Without repeating the entire discussion of the Ostroms’ work, I now turn to a few concluding reflections on Elinor and Vincent Ostrom’s work that will be important for my discussion of the relationships between democracy, markets and commons.

In general terms, the work of Elinor and Vincent Ostrom has shown that the tragedy of unregulated commons and what I have defined as the tragedy of open and competitive commons can be overcome. As Elinor has demonstrated, these problems may be overcome by cultivating communication, reciprocity and trust on the one hand and by developing rules and regulations against overuse that are, in turn, upheld through mutual monitoring and graduated sanctioning on the other. It is important to note that their findings also emphasize that the people affected by a specific resource system should be included in the codetermination of its rules and regulations in order to provide an institutional framework that is adapted to fit the specific cultural and ecological context. Such forms of democratic governance are also understood as strategies in dealing with the limitations in the provision of public goods by the state. The Ostroms call this type of democratic collaboration with the government coproduction, which must be understood as an alternative to the otherwise widespread notion of public-private partnerships. We might call this alternative type of organization a public-civil society or possibly even a public-commons partnership. Yet, owing to the weaknesses of small-scale democratic governance of economic goods and activities, they argue that these units should be embedded in a multi-layered and polycentric system of overlapping and democratically governed units.

Despite these improvements in our understanding of how to deal with the problem of tragedy and the manner in which democratic forms of governance can be developed, there are three respects in which the Ostroms' work is nevertheless somewhat limited. Firstly and as already discussed, their work lacks both a critique of privatization and of open and competitive markets. For this reason, I would argue that while they disprove Hardin's thesis for certain cases, it is important to note that they almost entirely ignore the perpetually recurring tragedy of open and competitive markets and the power asymmetries that result from them (Mattei 2013a: 20). Secondly, Elinor Ostrom's rather positivistic description of successful and unsuccessful commons importantly lacks explicit *normative* arguments as to why societies should develop democratic common property arrangements (Levine 2011: 11-13). Elinor accentuates this problem when she emphasizes that there is no single best social arrangement and that commons are no panacea (Korten/Ostrom 2010; E. Ostrom 2005a: 258).²⁸ This is understandable considering the problems of top-down blueprint thinking and policy implementations that the Ostroms discuss. Nevertheless, the lack of explicit normative arguments is problematic because

28 After she won the Nobel Memorial Prize in Economic Sciences in 2009, Ostrom was asked, in an interview by Fran Korten for *Yes! Magazine*, what her advice to someone with a powerful influence on natural resources policy would be. Her answer was: "No panaceas!" (Korten/Ostrom 2010). In her book *Understanding Institutional Diversity* Ostrom writes, "As social scientists, we have to use one of our favorite slogans [...] – it depends!" (E. Ostrom 2005a: 258)

it provides little counterweight to the widespread and rather well articulated arguments for individual private property and open and competitive markets – despite the existing negative effects that result from them. Thirdly, their rather narrow focus on common pool resources rather than common property arrangements accentuates this problem. This leads to the false impression that commons are specific things (pastures, forests etc.) and not social arrangements that can be utilized for the organization of more or less all resources and goods. Due to this rather limited definition of commons and their lack of explicit normative arguments for commons arrangements, it can be expected that commons might simply remain charming niches in the threatening stormy seas of the existing market society.

In order to deal with these problems, I believe it necessary to develop a normative justification of commons in the name of ecological sustainability and human freedom. I will do this in relation to the institutions of property, the state and the market. But before that, I firstly develop an ecological understanding of democracy and the commons that prioritizes the shared, common reality of humans and the non-human world and their co-creation of that reality. Let us therefore now turn to a more ecological approach to the commons.

