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Towards a plural world of self-organising actors¹

Elinor Ostrom's research programme

“Thus writers in the classical tradition, overlooking the special assumption underlying their theory, have been driven inevitably to the conclusion, perfectly logical on their assumption, that apparent unemployment (apart from the admitted exceptions) must be due at bottom to a refusal by the unemployed factors to accept a reward which corresponds to their marginal productivity. A classical economist may sympathise with labour in refusing to accept a cut in its money-wage, and he will admit that it may not be wise to make it to meet conditions which are temporary; but scientific integrity forces him to declare that this refusal is, nevertheless, at the bottom of the trouble” John Maynard Keynes (2003, 26).

In their book ‘How much is enough?’ Robert and Edward Skidelsky view economics as “probably [the] most important intellectual barrier standing in the way of a decent life for all”. They speak of “the deathly orthodoxy that sails under that name in most universities across the world” (Skidelsky/Skidelsky 2012, 12). In the foreword to his ground-breaking magnum opus ‘The General Theory of Employment, Interest and Money’ Keynes wrote: “The ideas which are here expressed so laboriously are extremely simple and should be obvious. The difficulty lies, not in the new ideas, but in escaping from the old ones, which ramify, for those brought up as most of us have been, into every corner of our minds” (Keynes 2003, 10).

The *orthodoxy*, from which Elinor Ostrom wanted to free us, was mainly the assumption in social science that rational human beings are incapable of cooperating out of their own free will. Starting from a neo-institutional rational choice approach she then breaks the limitations set by such an approach and opens the horizons of a new social science that should be in the position to adequately reflect on the plurality and complexity of modern societies as much as on the pursuance of democratic self-government and individual self-determination. In many ways Elinor Ostrom contributed towards the broad paradigm change in social science that was already underway. First, this concerns the abandonment of methodological individualism and the embracement of a methodology of socially-embedded social individuals. Second, Elinor Ostrom, and the Bloomington School that she strongly influenced, contributed towards overcoming the idea of markets as the ideal form of social interaction and instead helped shift the focus towards a plurality of forms of social agency. Third (and by no means last), her entire work is characterised

¹ I wrote this article in remembrance of the time I spent at a workshop on political theory and policy analysis at Indiana University in June 1997 where I met Elinor and Vincent Ostrom. When I refer to the works of Elinor Ostrom, it must not be forgotten how special a thinker she was. Her work is at once characterised by its impressive and outstanding individualism as well as an unusual capacity for cooperation in solidarity with others. Reading her works it becomes clear that entire texts and also parts of texts have been written together with other authors. Equally though, she wrote some of her main works entirely by herself. When writing about Elinor Ostrom, it is important not to oversee the network of researchers of which she and her husband constituted the centre. An extensive bibliography of her works can be found in Ostrom 2013). This list also contains numerous links to online publications.

by an unparalleled new and fruitful relationship between broad empirical research and the development of social science models. This overcame the existing gap between elegant but unpractical and misleading models, and very broad but often theoretically worthless field studies.

Equally though, this also marks the limits of Elinor Ostrom's approach: the central role awarded to individuals and the micro level hides the importance of the broader social context and the related structures of socialisation, power and property. The focus on local cases of jointly managed goods is blind to the far broader processes of social production and reproduction into which these are embedded and which form them. The structures of capitalist modernity remain external to this approach. This brings with it the risk of falling for the illusion of a new world of commons that does not have to deal with a transformation of the fundamental structures of capital-dominated current societies.

Aligica and Boettke write: "At the core of the Bloomington School of Institutional Analysis lies a paradox. We have seen that, on the one hand, time and again it makes recourse to Alexis de Tocqueville's assertion that 'a new science of politics is needed for a new world.' Yet, on the other hand, the school is trying to revitalize and extend into the new millennium a traditional mode of analysis in Western political and economic thinking" (Aligica/Boettke 2009, 137). Productivity and the limitations of Elinor Ostrom's approach are intrinsically related. She attempted to beat her adversaries with their own means; something that becomes clear right from the outset of her controversy.

Elinor Ostrom's starting point is clear: she repeatedly refers to Garrett Hardin's very short but extremely influential article 'The Tragedy of the Commons' from 1968 and quotes his apodictic hypothesis: "is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all" (Hardin 1968: 1244). Precisely because many social systems are based on the common use of goods, writes Hardin, individual human rights cannot be universally implemented: "If we love the truth we must openly deny the validity of the Universal Declaration of Human Rights, even though it is promoted by the United Nations" (Hardin 1968: 1246).

Hardin wrote this in the shadow cast by two intellectual giants (Thomas Hobbes and John Locke²), the founders of the social science of bourgeois modernity. Hobbes postulated that free humans who were not unconditionally subjugated to an absolute state, the Leviathan, would mutually destroy themselves. Only subjugation could bring safety, protect private property and guarantee contractual freedom. From here John Locke concluded that not the commons but instead the private appropriation of what had been commons, free market competition and the accumulation of capital would generate wealth in society.

Either way, the rational egoism of individuals, generalised competition and the protection of the interests of all by the 'invisible hand of the market' or, where this fails, by 'the visible hand of the state' have been, according to Elinor Ostrom, the pillars of social science for at least the last 250 years. The triangle of personal liberty, competition and the execution of the entailing practical constraints by politics is based on this fundament. There is no room for democracy understood as a "government of the people, by the people, for the people" (Abraham Lincoln). Democracy within this context is not a necessity; it is an accessory. Friedrich August von Hayek brought this to the point when he justified the (temporary) establishment of a military dictatorship in Chile as a prerequisite for the implementation of a liberal market order (Szacki 1995: 155 f.). He believed that people should delegate their capacity for social action or accept its usurpation by dictators ('well-meaning representatives of public well-being') who will then solve the dilemmas of collective action for them.

This is the fundament of modern social science that Elinor Ostrom delved into in a more lucid and pertinacious manner than any other researcher over the last fifty years. Her method is not the direct attack; it is subversive. Her goal is a change of paradigm that converts the fundamentals of classical economic theory and its neoclassic successor into a very special case of a far more

² It is interesting that it is Thomas Hobbes who repeatedly appears in Ostrom's work as the representative of authoritarian power and not John Locke, who formulated the classical bourgeois legitimacy of the privatisation of the commons (Locke 1980, 115–130; and a critique of this text by Brie 2012, 133–143).

general theory. This is similar to the transformation of classical physics by Max Planck. Maybe the work of Elinor Ostrom and that of those who worked with her or during her time on such a transformation (represented by the umbrella term 'heterodoxy') will later be seen as a turning point in the social sciences equal to the development of modern physics 100 years ago. Some of the approaches developed by her and her colleagues are sketched out in the following.

Elinor Ostrom offered the most concise summary of her life's work in her acceptance speech for the economic sciences Nobel Prize in 2009. The speech bore the title: 'Beyond Markets and States: Polycentric Governance of Complex Economic Systems'. Looking back on her "intellectual journey" (Ostrom 2009: 408) that began in the late 1950s she remarked: "The early efforts to understand the polycentric water industry in California were formative for me" (ibid.).³ As Ostrom has repeated in numerous publications, her empirical findings were at odds with the dominant theoretical approaches of the time. In her speech in Stockholm she summarised this using three key notions: 'two types of goods', 'two optimal organizational forms' and 'one model of the individual'. She was referring to the view in which private versus public goods, the market versus the state, and omniscient rational egoists were viewed as the key factors in understanding the world at the time. In the following, I will continue on the path of these three key notions and complement them with the concept of polycentrism before providing some comments on Ostrom's development of a new paradigm for social science research. Finally, I will look at a limitation within Ostrom's approach that could stand in the way of expanding her approach into an encompassing paradigm for a new social science. At the centre of this text is not an appreciation of the life work of Elinor Ostrom,⁴ but instead, some elements that to me seem important for the development of a heterodoxical social science that could spur a social and ecological transformation of modern societies.

1. The plurality of goods and the role of resource systems in providing these goods

Paul A. Samuelson put the focus on the differentiation between private and public goods and explained when it makes sense to make goods publicly available (Samuelson 1954). James Buchanan expanded this dichotomy in 1965 through the introduction of club goods (also called toll goods by Ostrom analogic to toll stations on motorways) (Buchanan 1965). In her PhD Ostrom studied California's water economy. During her research, it became clear to that this triple approach was an inadequate means of understanding the specific character of the system of groundwater provision she was analysing. On the one hand, users' access to the supply system could not be withdrawn as easily as a club membership, whilst on the other hand a danger existed, unlike with other goods such as knowledge, that unrestrained use of water could lead to a depletion of that resource. Ostrom uses the term 'common pool resources' (CPR) to refer to shared resources that cannot be replenished when overused. In the following, these resources are referred to as common goods. Importantly, until that moment only goods which – at least in principle – could increase in number with economic growth were being discussed; however, in 1977 Vincent and Elinor introduced a type of goods into the discussion characterised by its limited availability (see Table 1) (Nutzinger 2010). The increasing research undertaken on common goods owes a lot to their impetus. Until the 1980s the terms commons and commoning were applied exclusively to traditional, historical or disappearing economic systems, over the last ten years this has fundamentally changed. *Commons* has become a fundamental contemporary term and an "indicator of historic movement" (Koselleck 2004: XIV).

³ This research was embedded in analyses of the public administration conducted by Elinor Ostrom's future husband Vincent Ostrom together with Charles Tiebout and Robert Warren. This led to the development of a concept of the "polycentric public administration as a system of multiple, formally independent actors that is superior both to purely private as well as the centralised, state provision of public goods. The necessary knowledge and the authority to implement goals directed at common well-being are more likely to develop in such polycentric systems of social governance" (see Ostrom et al. 1961).

⁴ This article therefore complements the text by Günter Krause on Elinor Ostrom and her contribution to a "different canon" of economic sciences (Krause 2012: 94). Krause systematically presents the basic merits of her approach. Aligica/Boettke 2010 features a short summary of Ostrom's work; the Bloomington School as a whole is analysed in 2009.

Table 1: Types of goods (taken and slightly adapted from Ostrom/Ostrom 1978)

Exclusion	Subtractability	
	separate	joint
yes	<i>Private goods:</i> bread, shoes, cars, books, etc.	<i>Toll or club goods:</i> theatres, night clubs, telephone services, motorway tolls, cable TV, electricity
no	<i>Common pool resources:</i> Water from groundwater, fish from fishing grounds, crude oil from oil fields	<i>Public goods:</i> peace and security, national defence, a struggle against a mosquito epidemic, fire protection, weather forecasts, 'public' radio and TV

This differentiation between four types of goods forms the basis of Elinor Ostrom's entire work. In 2000 she wrote: "Common-pool resources share with public goods the difficulty of developing physical or institutional means of excluding beneficiaries. Unless means are developed to keep nonauthorized users from benefiting, the strong temptation to free ride on the efforts of others will lead to a suboptimal investment in improving the resource, monitoring use, and sanctioning rule-breaking behavior. Second, [...] the products or resource units from common-pool resources share with private goods the attribute that one person's consumption subtracts from the quantity available to others. Thus, common-pool resources are subject to problems of congestion, overuse and potential destruction unless harvesting or use limits are devised and enforced" (Ostrom 2000: 337 f.).

A closer look demonstrates that within this classification of goods (described in more detail in other works) that when speaking about private, public and club goods, Ostrom always speaks of the goods themselves, but when talking about common pool resources the focus is always on the fact that they have to be extracted from a specific resource system. Strictly speaking the important thing is not the good in itself (water, fish, wood, etc.) but the fact that it is 'harvested' from an ecosystem, the output of which cannot be increased indefinitely (if at all). Overuse therefore leads to destruction. As such, it is no coincidence that Ostrom and the researchers she collaborated with mainly studied natural resource systems (more or less influenced by humans), or systems (such as irrigation) directly connected to them. In the end, common pool resources are identified as systems belonging to the biophysical world (Dolšak/Ostrom 2003: 12) or are related to intellectual goods (Hess/Ostrom 2007b). Taking the example of electronic libraries, Charlotte Hess and Elinor Ostrom show how great an effort it is, how widespread a free-ride mentality is, and how long it takes to develop both recognised rules and compliance with these rules (Hess/Ostrom 2007a). Generated knowledge proves to be a good whose use as a public good supports the community, but its generation and availability is also subject to the same constraints as that of other common pool resources. Even the use of knowledge can be subtractive if the free access to knowledge, the generation of which required an investment, leads no new knowledge to be produced in the future because the companies that generated the knowledge cannot make profits from it to refinance themselves. Historically, this has led to the tension between free access to knowledge and the (temporary) patenting of knowledge.

But what would happen if the consequences from the differentiation of goods and the systems that produce and reproduce them were consequentially implemented? It would lead to a situation where it would be necessary to rethink the connection between economy and ecology (still present in the old word *oikos*) and develop it into a modern version. The economy would then have to be thought mainly as a reproductive economy. We would then have to understand that a great number of quite different goods (whether private, public, club or common public resources) derive from networked systems of common resource usage and both positively and negatively impact on these. The earthly world – the Gaia sphere – is not only a common pool resource in its entirety; the legal system, the libraries, the schools, multinationals, transport systems, and the communities in which we live are also complex systems on which our lives depend and which are constituted by essential elements that Elinor Ostrom described as related to common pool resources.

Ultimately Elinor Ostrom's approach opens the door to a new understanding of the economy that is, political economy as the science to understand resource systems that produce (and re-produce) the enormous amounts of different goods that we use. All of these systems, in one way or another, are constituted by elements that she analyses as common pool resources. They require investment in their maintenance and development, they must be controlled and managed and they must be protected against damage. Access to goods can be provided very differently; either through buying and selling, tenancy, through insurances, by paying for the right of use (or having that right without having to pay), and through formal or informal deals. Depending on the type of good, one or another of these forms may be more appropriate. The resource systems themselves also reflect the characteristics of common pool resources to different degrees. This can be a side aspect such as in small private companies or take on a prominent position such as in systemically relevant banks or even in systems such as public health or banking supervision.

All forms of social cooperation have important common pool resource traits – not merely because they depend on natural resources: reciprocity must always be ensured (as relative as it may be). Rules must always be established, rule compliance monitored and non-compliance punished. This basis provides a means of defining different resource systems according to their organisational type. This was Elinor Ostrom's second step.

2. The plurality of organisational forms and property

Contradicting Hardin's assumption, Elinor and her colleagues understood that the destruction of a common pool resource is by no means inevitable and that actors can resolve the dilemma of collective action when using common pool resources despite the often highly complex relationships found in modern society. Field studies were undertaken to test the 'standard hypothesis' (Krause 2012: 101). Hardin's theory that outside of ideal markets actors are basically incapable of solving the dilemma of social cooperation has its roots: "Models that use assumptions such as complete information, independent action, perfect symmetry, no human errors, no norms of acceptable behavior, zero monitoring and enforcement costs, and no capacity to change the structure of the situation itself help the analyst derive precise predictions" (Ostrom 1990: 191). However, they are only valid in specific situations: very simple situations, conditions of extreme competition, a short timeframe, or the lack of possible communication etc. In fact, the preciseness of such a statement is inversely proportional to its connectedness with real world situations.

Eventually the broad, long-term and international field studies, laboratory experiments and computer simulations led the researchers working with Elinor Ostrom to postulate a number of conditions that stood in the way of successful cooperative action on the basis of common pool resource systems: "Overharvesting tends to occur when resource users do not know who all is involved, do not have a foundation of trust and reciprocity, cannot communicate, have no established rules, and lack effective monitoring and sanctioning mechanisms" (Poteete et al. 2010: 228). Furthermore, conclusions were also drawn about how these obstacles could be overcome. (1) The limits of a resource system must be clearly defined. (2) Proportionality between benefits and costs for those involved must be established. (3) Wherever possible, the people affected should be part of the group that is able to change the rules. (4) Control must be enforced by the people affected or by actors accountable to them. (5) Sanctions for breaking the rules must increase in severity (small infractions are not punished particularly hard). Punishment should be applied by the users themselves or by others accountable to them. (6) Participants should be provided with easy access to simple forms of conflict resolution. (7) Users should be given the right to organise themselves and provided with long-term rights to a resource that are not threatened by external actors (governments etc.). (8) The appropriation, allocation, monitoring, enforcement of rules, conflict resolution and management need to be organised polycentrically at different levels that are all embedded within one other (Ostrom 2005: 259).

Examining the complexity of real institutional arrangements for the use and management of complex resources in this manner enabled Ostrom to overcome the dichotomy of private and public ownership. Shlager and Ostrom distinguish between five specific forms of property which can all be further detailed, but together represent a bundle of property rights. These are (1) the

right to access resources, (2) the right to withdraw resources, (3) the right to participate in management decisions, (4) the right to exclude others from such access and finally (5) the right to sell or lease these rights as a whole or in part (Schlager/Ostrom 1992).

But one insight remains peripheral: all systems from which we withdraw our goods (no matter whether they are used privately, publicly, communally or in 'clubs') have elements of common resource systems and are therefore equally characterised by such a plurality of property rights. As a side remark, Ostrom and Dolšak note that "The modern corporation, for example, is viewed by some as the epitome of private property. A publicly held corporation, however, is more properly thought of as common property than as strictly private property. A large number of shareholders, managers, employees, and customers hold identifiable rights in the corporation, but no one person or family holds all of the relevant property rights" (Dolšak/Ostrom 2003: 4). However, this insight is not generalized and resource systems that to a particular degree demonstrate characteristics of common pool resources remain at the focus of the analysis.

Until now, no methodology has been described with which to define socially optimal forms of property and regulation. The dichotomy of public/state and private has long become obsolete; the real development of the legal regulation of property relations has become extremely complex, but the question as to whether there are overarching criteria that demand one or another form of property regime remain basically unanswered. According to Ostrom, this can be related to the type of goods in question, even though she rightly says that this should not imply a linear correlation (Ostrom 2000: 338). These criteria would, on the one hand, be the costs connected to the exclusion of potential users (high for example when in water scarce areas groundwater is used for agriculture, but low for use in housing). On the other hand, there are the profits resulting from the participation of further actors in the use (depending on whether the good is subtractive and whether use leads to a drop in the output of the resource such as with groundwater at a certain point of extraction or instead leads to growth as in the case of Wikipedia). The particular costs are naturally, technically, socially, politically and culturally defined and constantly change. Of course there are also optimum values that must be properly defined (see Table 2).

Table 2: Optimal property types depending on the type of goods

Inclusion profits	Exclusion costs	
	Low	High
Low	<i>Private property:</i> resources directly belonging to individuals and shared use (housing, individual consumer goods, etc.)	<i>Common property:</i> social security services and use of common pool resources from which certain groups of people cannot be excluded
High	<i>Associated property:</i> contractually organised forms of cooperation to collectively provide goods (diverse forms of companies from private to cooperative or state run)	<i>Public property:</i> goods and services available to everyone independently of his or her contribution and belonging to a (state-based or other) community

Slightly different would be an optimal property regime that is equally committed to human rights as well as to the complexity of modern resource systems (Brie 2006). If an analysis is undertaken of the costs and benefits for insiders who make goods available according to a particular resource system, and of which public good or public bad the use of such goods implies, the focus moves to the regulation by society of a specific economic system. The effect each type of property will have depends on the larger property regime in which it is embedded. Peer-to-peer production for example works where individuals directly benefit from their contributions to a jointly produced good. This is also true of many voluntary associations. An own car, on the other hand, has a high private value, but it negatively impacts on the environment. A large share of such environmental costs is borne by communities threatened by climate change, but also by future generations. Hospital staff provide goods with a high use value for sick people (externals); their work must therefore be compensated accordingly. The use of resources that can only be used collaboratively and that

beyond a certain point damage the resource itself (that is: common pool resources) must either be strictly regulated or limited. This could be in the form of compensation payments (if this helps preserve the resource) or by limiting use. In many cases joint forms of management by users and those affected would certainly make sense.

Table 3: Optimum property regimes depending on cost/benefit relations of actors providing a resource and the public good or bad

Cost-benefit relation for insiders	Externalities		
	positive (<i>public good</i>)	neutral	negative (<i>public bad</i>)
positive	Peer-to-peer production, associations	Cooperatives, communities	Bans, restrictions on usage, or high compensation
	Cooperative provision of public goods by individual and collective actors with public funding	Companies with a certain degree of stakeholder participation	
negative	Publicly-funded organisations providing public services	Purely private, profit-oriented companies	Non-existent

However, this has still not answered the question whether people are at all capable of building institutional forms in a self-determined manner, which would enable them to achieve optimal results individually and/or collectively. The answer to this question fundamentally depends on a person's underlying view of human beings. This was the third point in Elinor Ostrom's acceptance speech for the Nobel Prize in economic sciences.

3. A new way of seeing the individual and the possibilities of overcoming the dilemmas of collective action

Elinor Ostrom's approach is based on rational choice and methodological individualism. Rational individuals are the fundamental actors, whose actions under determined institutional conditions (as described for example by Hardins) have sub-optimal consequences for both the person concerned and for other people affected by their actions. This leads to "social anomalies" (Coleman 1994: 167) that cannot be explained using the neoclassical premise of perfect markets. The work of Elinor Ostrom is part of a whole set of attempts over the last few decades to overcome the classical assumption of purely rational, benefit-maximising actors supplied with full information and instead aimed to develop a "More General Theory of the Individual" (Ostrom 2009: 429).⁵ In her laboratory experiments she showed that people can cope with incomplete information by developing specific sets of rules (of thumb) (Ostrom 2005: 104). Although it is clear that "Homo Oeconomicus *a/so* exists" (Fehr/Gächter 1998: 847) and a less-than-negligible minority does act purely egoistically, these people nonetheless remain in the minority.

Together with Sue E. Crawford, Elinor Ostrom managed to formally integrate a whole set of experimentally confirmed parameters into economic game theory that influences the actions of

⁵ Among these are the contributions by James G. March (1988), Herbert A. Simon (1983), Amartya Sen (2009) and Jon Elster (1983), to name just a few. These correspond with new developments in the behavioural sciences such as neurobiology, neuropsychology and ontogenesis. Examples include Michael Tomasello (2006), Giacomo Rizzolatti and Corrado Sinigaglia (2008) as well as Thomas Fuchs (2009).

individuals in complex situations of cooperation. These include shared strategies, the internalisation of norms and the important role played by rules. To do so, she introduces a so-called delta parameter. According to Ostrom, norms are important because cooperative behaviour is perceived by many people as positive and provides them with a feeling of warmth (this has been demonstrated neuropsychologically). Breaking norms, on the other hand, creates a feeling of shame among many people. Furthermore, it may lead to external sanctions, and this endangers people's need to maintain their reputation. The delta parameter is then the sum of the expected changes to costs resulting from compliance or deviation from norms (for an overview see Ostrom/Crawford 2005a: 169). Instead of the either/or of classical game theory with its often tragic forecast of the insolvability of problems of cooperation, a whole new spectrum of possibilities develops (ibid.: 156-163).

In a long iterative process of learning people can develop, adapt, change and enforce rules that ensure cooperation even under difficult circumstances. These rules define the positions of individuals, the limits of cooperation, options for action, control, information, rewards as well as goals (Ostrom/Crawford 2005b). The social capital accumulated in social relations and in society is considered a decisive factor (Ostrom/Walker 2003: 323 f.).⁶ Empirical field studies and laboratory experiments led to the definition of six critical variables that make cooperation possible in systems using common pool resources: (1) communication (most importantly face-to-face communication); (2) knowledge of the reputation of other participants (whether they are credible); (3) high marginal per capita return; (4) exit options when cooperation is not reciprocal; (5) a long-term perspective, and (6) gradually increasing sanctions defined by the participants themselves (Ostrom 2009, 422 f.; Poteete et al. 2010, 229 f.). Considering the real complexity of fields of action and natural and social systems there can be no out-of-the-box solutions that can be imposed upon actors (Ostrom/Cox 2010). Problems can only be solved in a just and efficient manner through open processes.

4. The concept of polycentric systems

The concept of governance in polycentric institutions is covered by the final part of Elinor Ostrom's second major work after 'Governing the Commons'. This book 'Understanding Institutional Diversity' (2005) is a systematic attempt to summarise the results of a new independent research methodology called institutional analysis and development (IAD) framework. In the last chapter entitled 'Robust Resource Governance in Polycentric Institutions' the micro-social context (with action arenas as a central category of analysis) (Ostrom 2005: 32 ff.) is embedded into broader social relations. This closes the circle on her studies mentioned above from the 1950s and 1960s. In those studies she had made it clear that (mono-centric systems where a single actor holds the entire decision-making power) are inferior to polycentric systems where numerous actors can make decisions within a generally recognised and accepted system of rules (Ostrom et al. 1961). This approach was later expanded by Vincent Ostrom (V. Ostrom 1999).

According to Ostrom, polycentric systems can decisively contribute to self-organisation and to overcoming the limitations of purely decentralised structures. External impulses, possibilities of acting against local tyrannies together with others, overcoming stagnation, the allocation of objectified knowledge and the creation of open spaces for learning and mechanisms for conflict resolution can help develop the potential of self-organisation. What is more, many resource systems are highly complex and operate on a large-scale (Ostrom 2005: 255). As Ostrom explains: "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 a local government. These are nested in several levels of general-purpose governments that also provide civil, equity, as well as criminal courts" (ibid: 283).

Many studies have shown this connection, for example the comprehensive analyses of forestry regimes in Latin America, Asia and Africa from the 1990s as part of the International Forestry Resources and Institutions (IFRI) research program. In this study the authors conclude that the

⁶ Since Robert Putnam (1993) this research has gained ever greater importance and is now nearly forms its own discipline (Castiglione et al. 2008).

success or failure of common pool resource systems depends to a great extent on how well they are embedded in 'broad governmental and administrative structures': "National governments can facilitate local self-organization by providing accurate information about natural resource systems, providing arenas in which participants can engage in discovery and conflict-resolution processes, and providing mechanisms to back up local monitoring and sanctioning efforts. The formation of pro-grassroots coalitions of nongovernmental organizations, international donors, and sympathetic political elites makes a major difference in how local users may be able to organize themselves effectively" (Gibson et al. 2000: 233).

The concept of polycentric institutions – that is only briefly described here – is not organically linked to other fundamental elements of Ostrom's general methodological approach. Instead, her approach is based around the distinction between four action situations: (1) the operative situation of immediate supply, production, distribution, appropriation and consumption of goods (operational situations), (2) collective choice situations, (3) constitutional situations and (4) situations that could also be called revolutionary, that is, exceptional situations which define the fundamental rules themselves (metaconstitutional situations) (Ostrom 1999, 1990, 53 f.). Polycentric systems promote strategies where actors shift between the different levels (level-shifting strategies) (Ostrom 2005: 62 f.). This means an attempt can be made to solve collective action dilemmas at a 'higher' level if they cannot be solved at a 'lower' level and external actors can also be called upon for help. This can greatly reduce the high transaction costs related to pure market systems as well as to centralist hierarchical organisational forms. In this way, learning spaces, possibilities to balance profits and losses, trust in and reputation of actors to act fairly can all be strengthened. Notwithstanding the importance awarded to polycentric systems by Elinor Ostrom, the systematic development of this approach clearly lags behind the depth of her analysis of the micro level.

5. Elinor Ostrom's plural and cooperative research method

On the one hand, in its early stages Elinor Ostrom's work developed out of cooperation with inspiring field researchers such as Vincent Ostrom, whom she later married, and his colleague Charles M. Tiebout and Robert Warren. However, her work also permanently oscillated between the development of a new theoretical and methodological basis and empirical field research and later moved towards unlocking the theories and methods of game theory and testing them through experiments and in computer simulations. In 2010, she published 'Working together. Collective action, the commons, and multiple methods in practice' together with Amy R. Poteete and Marco A. Janssen. It provides a comprehensive introduction to Elinor Ostrom's research programme that she developed in close cooperation with numerous other researchers.

The most important institutional anchor for this research remains the Workshop in Political Theory and Policy Analysis at Indiana University in Bloomington, which she founded together with Vincent Ostrom in 1973. The research on common pool resources, on irrigation systems in Nepal, and the forestry resources project mentioned above were all undertaken in this setting. The workshop was connected to two further initiatives: the Center for the Study of Institutions, Population, and Environmental Change at Indiana University, and the Center for the Study of Institutional Diversity at Arizona State University. Elinor Ostrom gained financial support from the National Science Foundation, the United Nations Food and Agriculture Organization, the Ford Foundation and the MacArthur Foundation. The impressive institutionalisation of this research was accompanied by the creation of broad formal and informal networks, and a spirit of solidarity that really promoted working together.⁷ The medium-sized building in Bloomington that housed the workshop became a vibrant centre attracting many researchers from all over the world and since the late 1990s has represented the central source and online library of global research in this field (Hess n.d.). New questions were continually posed at the workshop and answered in large and small conferences and workshops.

The book 'Working together' summarises these experiences and further develops fundamental approaches of a form of research that confidently distinguishes itself from the mainstream. It

⁷ An overview on Elinor Ostrom's different functions on academic boards and her awards clearly show this connection (Ostrom 2013).

contains a critical analysis of how research structures and funding guidelines stand in the way of cooperative long-term research designed around a broad empirical fundament: “In general, career incentives encourage either specialization or relatively narrow forms of multimethod research” (Poteete et al. 2010: 24). It seems that social science research is often a victim of the “tragedy of common pool resource systems”, because its institutional structure stands in the way of long-term cooperation and the application of multiple methods. Cooperative research is therefore a collective action problem and demands corresponding individual incentives, an appropriate institutional framework and a long-term perspective. “It seems worthwhile for the scholarly and policy communities to recognize hurdles to collaborative research and strive to lower them. Universities, governments, and nongovernmental granting agencies could encourage more collaborative, broadly comparative and long-term research by providing greater institutional and financial support” (Poteete et al. 2010: 270). For this to happen, career incentives would need to change.

Even if Ostrom does not admit it in this context, the rational egoist acting in conditions lacking cooperation, with no interest in the general well-being and who lacks trust in other people is not simply a theoretical construct. It can also be considered a reflection of researchers working under conditions of extreme competition, individualist career strategies, short-term perspectives and strong personal dependencies. It is then a strategy through which social researchers try to escape from such an anomic framework for action. The importance of Elinor Ostrom’s work lies not least in the fact that she laid the groundwork for, initiated the creation of, and led institutions aimed at overcoming these limitations. Most importantly, she demonstrated how social science as a field could be developed as a common pool system. She viewed this as a contribution towards helping people who depend on such systems due to the situation they are in (whether these systems are natural or social in nature) and take the securing and development of these systems into their own hands.

‘Working together’ systematically analyses the advantages of the various methods. The book includes field studies, such as in depth individual studies, broad comparative studies, a systematic meta-analysis and extremely complex studies of larger numbers of cases based on the same methodology – the same methodology used by Ostrom and her colleagues to study forestry resources. Secondly, she discusses the results of social science experiments in laboratories, computer simulations and field situations. This is complemented by her own experiences, stretching over fifty years, and the in depth study of others researchers’ results.

Elinor Ostrom and her co-authors conclude that the Hardin theorem of the inevitable failure of cooperation under common pool conditions has been refuted both empirically and theoretically: “Research based on field studies, laboratory and field experiments, game theory, and agent-based models has conclusively demonstrated that it is possible for individuals to act collectively to manage shared natural resources on a sustainable basis. [...] The earlier conventional theory is no longer viewed as the only relevant theory for understanding the commons” (Poteete et al. 2010: 215).

6. The possible limitations of Elinor Ostrom’s approach

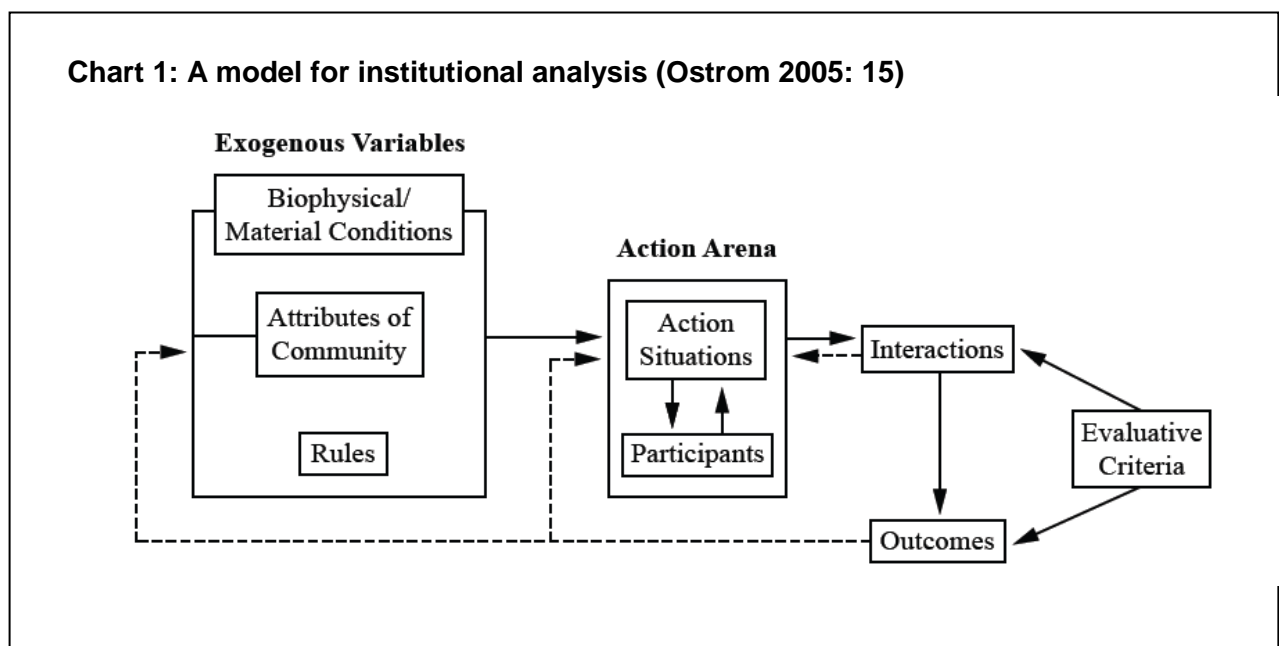
Elinor Ostrom’s work reaches far beyond the social science community. The appeal of her work lies in the message she summarised at the end of her Nobel Prize acceptance speech: “The most important lesson for public policy analysis derived from the intellectual journey I have outlined here is that humans have a more complex motivational structure and more capability to solve social dilemmas than posited in earlier rational-choice theory. Designing institutions to force (or nudge) entirely self-interested individuals to achieve better outcomes has been the major goal posited by policy analysts for governments to accomplish for much of the past half century. Extensive empirical research leads me to argue that instead, a core goal of public policy should be to facilitate the development of institutions that bring out the best in humans. We need to ask how diverse polycentric institutions help or hinder the innovativeness, learning, adapting, trustworthiness, levels of cooperation of participants, and the achievement of more effective, equitable, and sustainable outcomes at multiple scales” (Ostrom 2009: 435 f.). Her own work is directed at proving that this is *possible*. Many other results support the message that a third path exists beyond that of radical market competition and hierarchical subordination.

As important as this insight is, the work of Elinor Ostrom is nonetheless characterised by a one-sided focus on the micro level, on common pool systems and the assumption of actors as more or less equally powerful. She inherited this last assumption from rational choice theory and its combination with game theory. Her laboratory experiments were also based on the presumption that actors have more or less equal power to act in any situation. Many common pool systems have a large number of interdependent actors with strong veto rights, but in reality actors neither start nor end their cooperation on equal footing. The inequality Ostrom repeatedly recognised is actually a fundamental fact of society. Many of the cases analysed by her and her networks are characterised by the destruction of common pool systems that have become subjugated by privileged actors. Repeatedly, Ostrom points to the fact that individual transferable quotas (ITQ) lead to a concentration of resources in the hands of a few private actors, in many cases global corporations (Ostrom 2009: 435). Similarly, the use of capital-intensive large trawlers can ruin the livelihood of entire fishing communities in large regions. Alliances between governments and export oriented agro-capitalists are one of the main causes of the destruction of primeval forests, whether for wood or for the planting of global agro-products (Ostrom/Wertime 2000: 244). The list is long.

Although these facts were *observed* in field studies their *importance* for theory and methodology did not become a focus. Whereas in reality they are central aspects, in Ostrom’s social science context they remain peripheral. The issue of violence, endemic in many countries where common pool systems are concerned, is largely left unconsidered (on the history of this struggle see Marx 1974, 741 ff.; Polanyi 1995; Federici 2003; Linebaugh 2008; and Klein 2009). Classical games such as chess show, how the inequality of two initially equal players slowly increases until one of the players eventually dominates the game. An advantage acquired in one move increases the likelihood of gaining further advantages in future moves. In everyday reality though, equality is lacking from the outset, and institutional settings often successively reinforce such inequality.

The fixation on a certain type of resource system – common pool resources – and the search for possibilities for cooperation between equal actors cannot exploit the possibilities of a truly general social science research methodology based on a neo-institutional action approach. However, this weakness is also explained in the vision of the approach formulated by Ostrom. The blind spot is an internal scientific problem.

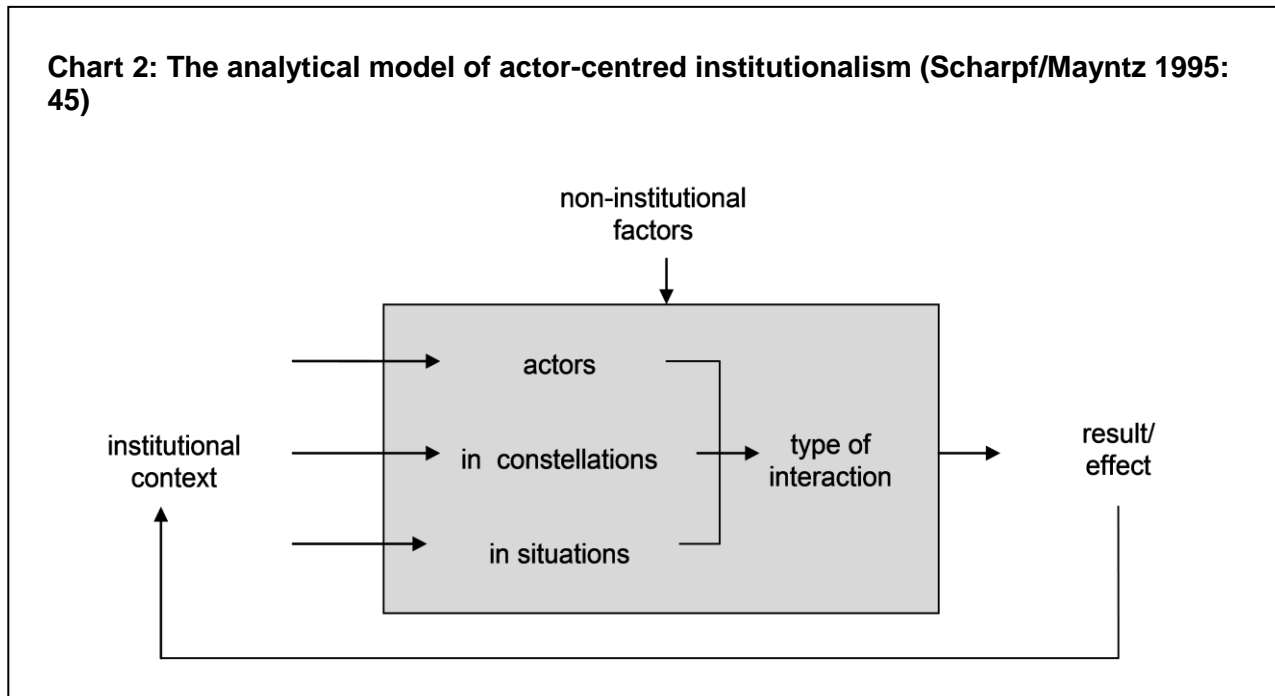
As I already mentioned, Elinor Ostrom’s approach is based on the Institutional Analysis and Development (IAD) framework; the *action arena* (see Chart 1) is at the heart of this framework.



This model treats real bio-physical, material and intellectual conditions as elements that *cannot* be *appropriated* by the actions of actors, but instead treats them as ‘exogenous’ variables. In game theory such appropriation is only considered in the form of payoffs (Ostrom/Crawford 2005a: 146).

In reality though, they affect the actors themselves and increase (or decrease) their potential for action. Access to institutional power becomes easier or more difficult, and through such payoffs these conditions become an internal part of the field of action.

Renate Mayntz and Fritz W. Scharpf's concept of actor centred institutionalism also clearly demonstrates these limitations. Only actors and institutions are integrated into this model in the narrower sense, whereas the resources required for action are treated as non-institutional factors. Moreover, "institutional factors are [...] a context for action that can both promote and inhibit action" (Mayntz/Scharpf 1995). This is demonstrated in Chart 2, which also makes the problem with Elinor Ostrom's approach very clear (see Coleman 1994: 167).

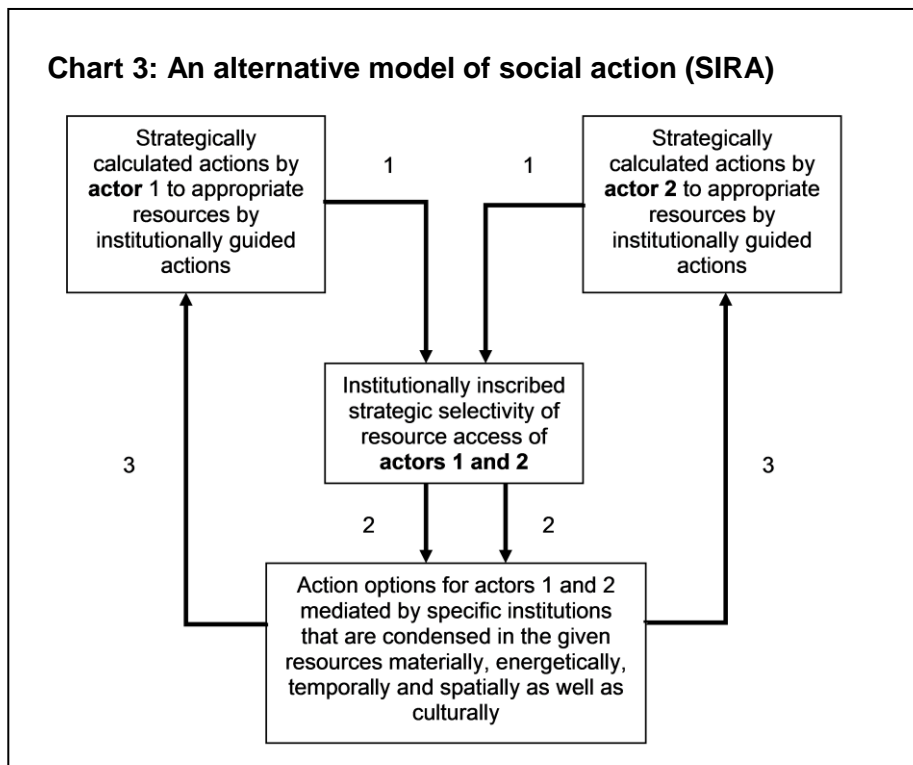


Strangely enough, this model is not action-centred enough. The focus on the importance of institutions for the description of action settings hides the fact that such settings are only produced, reproduced and changed by the actions of actors. From the point of view of the actors, institutions are a *means* of gaining access to resources in the broadest sense (these can be material, ideational, or in the form of recognition or inner self-worth). An action-centred approach needs to treat institutions as a means; otherwise actors are not really the starting point for such a model.

Bob Jessop has developed a Strategic-Relational Approach (SRA) (Jessop 2007: 21–53, with a detailed chart on page 41) with which he hopes to overcome the dichotomy of structures and actors. He shows that both form each other, and that structures promote specific strategies. A structurally inscribed strategic selectivity develops, which is accompanied by strategically calculated structurally oriented action (ibid.). Actually though this only produces a refined circular argument of actors and relationships. What though would happen, if actors were taken as the actual subjects of the own action contexts, people who make their own history even though they do so “under circumstances existing already, given and transmitted from the past” (Marx n. d. Chapter 1)? What if we were to assume that it is actors who act (instead of the circumstances or conditions), because only they can follow certain goals or aims? In this case, ‘external factors’ would have to work through subjects and it is only in this way that they could influence actions. Structures must be subjectified to become a part of action. As such, the selection of effects always depends on the criteria selected by the actors. From the point of view of the actors, society, rules and institutions are the mediating form with which to appropriate material, intellectual, economic, social, political, and cultural resources and the capacity to use or withstand force. The model sketched out briefly here views institutions as mediators of social action aimed at the appropriation of resources (the Strategic-Institutional-Resource Approach SIRA). It is a modification and expansion of Jessop’s approach and immediately places the plurality of actors in the centre, because social relationships are always relationships *between* actors. Fields of action (or *action arenas* in Ostrom) can then be understood as the cooperative or conflictive interaction between different actors, a process in

which relationships are created (institutions are activated and/or change), to access the resources required for their own reproduction and development.

Chart 3: An alternative model of social action (SIRA)



Such an approach could far more adequately explain the evolution and ruptures of institutional structures than the model adopted by Ostrom. The continual changes in attitudes, power relations, and options for action are treated far more clearly as a result of people's own actions. It would be possible to explain why in many cases no cooperative (let alone equality-oriented) solutions for common pool resources are sought (or found). The capacity of specific actors to implement certain forms of the production of goods related to a high degree of

efficiency would be integrated into the core of a theoretical methodological approach. This *efficiency* though is ambiguous: it can lead to a particular social group gaining the capacity for the use of force, but also to the freeing up of large quantities of resources or the development of more attractive ways of life. Only a research methodology that also focuses on the (re)production of social forms and that considers the ability of related actors to assert themselves is able to understand broader social developments and the chances and dangers associated with these developments.⁸ This could provide new points of contact for a re-reading of Marx as an emancipatory and critical analysis of social reproduction and the transformation of societies dominated by capital. It is here that further steps could be taken toward a 'new science' for a 'new world', and Ostrom would be an indispensable part of such an endeavour.

7. A successful breakthrough

Elinor Ostrom was able to break the paralysed orthodoxy and its focus on liberating markets and coercive states from within. Her understanding of the basis of this orthodoxy as a special case within a far broader world of possibilities, combined with her belief that people have far greater potential to create such worlds than is often assumed, led her to open a door and point towards a new path. Ernst Bloch described this transition in the following manner: "Particularly in creative work an important boundary has been overcome that I will call the threshold to the not-as-yet-conscious. Effort, darkness, breaking ice, the stillness of the ocean and a happy voyage can all be found at this point. Here, if a breakthrough is possible, a land will appear that no one has yet reached; a land that has never existed. It is the land that needs a certain human, the wanderer, a compass, and deepness in the land itself" (Bloch 1959: 1 f.; cited in Markun 1990: 19).

Elinor Ostrom's work provides reflective instruments of analysis for a movement aiming to transform society from a world of the ever greater production of goods towards a society of solidarity and participation (Reißig 2009, 2011; Klein 2013). At the micro level at least, she shows

⁸ This is the strength of Antonio Gramsci's hegemony approach that sees the hegemony of a social group as a given fact when this group 'is actually progressive, that is really drives the whole of society forward, not only by supplying society with existential needs but by expanding its cadres through a constant appropriation of new productive and economic fields of action' (Gramsci 1991: 1949).

how cooperation in solidarity is possible and points to the meso-social and macro-social requirements for such an approach: what is needed is a real polycentric society, or – to use an equivalent phrase from a social and political movement – ‘a world in which many worlds fit’ (Ejército Zapatista de Liberación Nacional).

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