

Institutions¹

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1. Introduction

The main aim of this entry is to illustrate the relationships between institutions and the choices we make. Institutions both influence and are influenced by our choices. They are a form of congealed structures that offer order to human interrelations. They play a core role, not least, in influencing how we perceive and use the environmental resource base of a society – how we are allowed and not allowed to intervene into each others' lives through using this common base.

In developing my perspective on institutions, I will start by referring to the great divide going through the social sciences – that between the 'individualist' and the 'social constructivist' position. On the one hand we have theories that portray the individual as an autonomous entity. Neoclassical economics is the most prominent representative of this stance with its firm positioning within methodological individualism. On the other hand we have various disciplines where different social constructs are understood to influence behavior also by *forming the individual and her perceptions*. As an example, motivations are within this tradition not seen as givens in the form of immutable individual preference functions. They are instead understood as influenced by social processes at various levels.

While some see social constructivism necessarily as relativist (e.g., Guba 1990), others (e.g., Bhaskar 1991 and this author) support a critical realist ontology. Concerning social relations, one cannot talk of objectivity in the social world in the same sense as concerning the physical. Certainly, the social structures and relations we create, the values they are based on, are not given. This does, however, not imply that they are to be treated in completely relativistic terms. To the contrary and exactly because they are human made, they are open to reasoned critique about what is best or what is the most reasonable to do. The point is that values and institutions, since they are collectively created, can both be discussed and evaluated across individuals. In this specific sense they are 'objective'. Moreover, the social world, the institutional structures we make, are both common to us, and they exist independent of us as specific individuals. This world is thus also 'objective' in the sense that it can be observed and studied as social 'facts'. Present institutions are, however, not the only way things can or should be ordered. So being 'facts' they are not 'givens'. They are open to critical evaluation and change.

Institutional theory has already played an explicit role in the development of ecological economics (e.g., Söderbaum (1994; 2000); Bromley (1998); Costanza et al. (2001); Lehtonen (2004); Paavola and Adger (2005); Vatn (2005a and b)). Its influence is most probably even more important through the different ways it has indirectly influenced ecological economics analyses. Looking at these developments, it seems safe to conclude that not least the position

¹ A more comprehensive presentation of the ideas covered by this entry is found in Vatn (2005a)

of classical institutionalism (see later) offers a particularly good platform for a further development of core aspects of ecological economics. It offers a good theoretical basis for further development of the experimentation done on various valuation techniques. It is helpful for understanding the dynamics of the ‘metabolism’ of various societies and when conceptualizing environmental complexities, risks and ignorance. It represents an understanding of motivation and choice, which is crucial when analyzing policy options and the formation of resource regimes.

In this presentation I will cover four main issues. First, I will expound different definitions of institutions and emphasize what I believe is a productive understanding of what institutions are and do. Next, I will present a selection of positions concerning the role of institutions in the economy. Thereafter I will briefly cover the complex issue of institutional change. Finally, I will offer an institutional perspective on various aspects of our use and preservation of the physical environment.

2. What are institutions?

Institutions are understood quite differently in the literature. A main divide goes between those defining institutions more like an organization and those seeing them as ‘rules’. The previous position is often found in political science, while the latter type is more typical for anthropology, economics and sociology. Defining organizations as institutions creates a problem in that organizations are also agents. One may argue that while agents are influenced by institutions, it is crucial to draw a line between the agent and the rules and norms defining the actions that agents undertake. Hence, one may argue that defining institutions as organizations creates confusion.

Concerning those understanding institutions as ‘rules’, there is also a core divide – this time between those basing their position on an individualist and on a social constructivist ontology. North (1990) defines institutions as ‘the rules of the game’. While taking the form of a social norm or a legal rule, they are understood as *external constraints* influencing the individual in her calculation of what is the most optimal to do. Hence, the law implies a restriction on the individual, and the cost of breaking the law enters the individual’s calculus of what is optimal to do. While North certainly accepts that institutions are formed by man, he does not see them as also forming man.

A social constructivist position takes into account the idea that institutions are not only constraints. They also influence the individual – the values an individual hold and what is considered right to do in certain situations etc. Within this tradition there are many different formulations used. Veblen (1919) – ‘the father’ of institutional economics – defined institutions as ‘settled habits of thought common to the generality of man’. Personally I favor a definition emphasizing also the things that institutions do. The following definition captures some core aspects in that sense:

Institutions are the conventions, norms and legal rules of a society. They provide expectations, stability and meaning essential to human existence and coordination. Institutions regularize life, support values and protect and produce interests.

The distinction between ‘conventions’, ‘norms’ and ‘legal rules’ is important along at least two dimensions. First, the need for a sanctioning mechanism varies from a convention to a legal rule. A convention is a ‘rule’ saying how a thing is. The language is a convention. The same goes for the various measurement scales. A norm is a rule saying how things should be. Hands should be washed before dining. We should not lie. We should greet people when we meet. We should help people with certain characteristics and in certain situations – e.g., the elderly when crossing a street. While a norm is also sanctioned by the mother not allowing the

child to eat before washing hands or the child feeling guilt when lying (i.e., the norm is internalized), the main characteristics of a legal rule is that it is backed by formal sanctioning – imprisonment, fines etc.

Second, and implicit in the above, we can distinguish between institutions as mere coordinating devices and those that regulate conflicts. Peoples' behavior is interrelated in various ways. We need to communicate to coordinate our activities – that goes for everything from mere exchanges to more cooperative action. In a complex world, understanding and communicating is difficult. A large list of conventions is developed to support such coordination. The language is the most important set of conventions. Still, specialized conventions like the metric system, the time conventions etc. are crucial for securing efficient and meaningful cooperation

Norms, on the other hand, emphasize values. They prescribe certain acts as expected in certain situations. In that sense they harmonize interests through forming common values. When fully internalized one does not need to sanction norms. They say what should be done and offer meaning to the situation. When interests cannot be harmonized – in the case of rival resource use – a formally sanctioned rule like property rights may be used to regulate the potential conflict. One person's claim to a benefit stream must be socially sanctioned and formally protected to avoid direct conflict. If use is not accepted by the owner, s/he can call upon the legal authority – e.g., the state – for protection.

While the role of power increases substantially from the realm of a convention till that of a legal rule, even conventions may be based on/protect power relations. The choice of a currency is hence not just a neutral convention. It is, however, important to acknowledge the various facets or levels of human interrelations. Some concern mere coordination, while others add meaning to a situation. Some emphasize common interests, while others protect the interests of a certain individual or group against that of others.

The definition and understanding of what institutions are and do must reflect our theory of choice to be consistent. If we see the individual as autonomous and choice as maximizing individual gain, institutions must by pure logic be seen as constraints. If we see the individual as significantly formed by the institutional context, the theory of choice or behavior must reflect this. Moreover, while the individualist model must see rationality as maximizing individual utility, the social constructivist position also opens up for the existence of individual vs. social rationality as captured by the 'I' and 'We' paradigms in sociology (Etzioni 1988)

3. Different positions in institutional economics

Going more into detail about the various positions on institutions found in economics, I will first make a short remark on the concept of a 'position'. Following Kuhn's (1962) idea of a paradigm and Lakatos' (1974) concept of research programs, one might expect that all sciences have a well agreed 'hard core', which the 'normal' science is protecting. Social sciences are hardly characterized by such hard cores. While neoclassical economics is the conceptual system within social sciences coming nearest to a 'normal' science, it is my impression that there is no full agreement even within this strand on what are the core assumptions and which should be the elements of the protective belt. This reflects, however, also the fact that neoclassical economics seems to be changing. Hence, while I will here – for pedagogic reasons – use a definition of neoclassical economics that seemed quite broadly accepted 20 years ago, it might be hard to find many economists of today defending it at all. Nevertheless, it is the model prevailing in most introductory and intermediate textbooks, and I believe it will take quite a while before trends observed now will materialize in full-fledged 'modernized' and canonized versions of neoclassical economics. Typically, the modernization

process reveals a series of inconsistencies that must be thought through. Personally I think this will bring the ‘mainstream’ or neo-classical position nearer to the institutionalist one.

Neoclassical economics

Following Lakatos (1974), Becker (1976) and Eggertsson (1990) one may define the following *core* of the (traditional) neoclassical model:

- rational choice as maximizing individual utility
- stable/given preferences
- equilibrium outcomes

Choices are understood as rational if preferences are rational and choices are made in accordance with what is preferred the most by the individual. This links rationality directly with maximization of utility. Nelson and Winter suggest that rational choice is “the central tenet of orthodoxy” (Nelson and Winter 1982:8). I would add, rational choice *as maximizing individual utility* has held this position. Preferences are assumed to be stable and given. This is the basic fundament for individualism, for the individual to be self-contained. One may observe authors within the neoclassical tradition that accept preferences to change. To keep the economic individualist perspective consistent, these changes must, however, not be the result of external circumstances.

Once more following Eggertsson (1990), the *protective belt* of neo-classical economics can be defined as follows:

- no information costs
- no transaction costs
- private property rights for all goods which are exchanged in competitive markets

I will emphasize that this is the *standard* protective belt. Over the last 30 years a large literature on risk and information asymmetries has developed, implying studying positive information costs. These are very important developments. It should, however, also be observed that they tend to create consistency problems in relation to the core. These are yet not well sorted out. As an example: How can maximization really be undertaken if information is costly (e.g., Knudsen 1993)? Solutions like rational expectation and Bayesian updating are both problematic in that sense.

The neoclassical model does not emphasize institutional issues, except for e.g., private property rights and competitive markets as showing up in the standard version of the protective belt. Certainly, other market and property structures are also analyzed by neoclassical/mainstream economists. While the law regulating property rights are understood as human made, markets still tend to be viewed as ‘a natural order of things’. Given the assumption of zero transaction costs, this may not seem as a hopeless idea. The existence of firms, common property arrangements, and state rationing has still motivated some economists to think further into these issues. This development formed the school of ‘new’ institutional economics.

New institutional economics

If it is costly to run the economic system – i.e., if transaction costs (TCs) are positive – it becomes an issue for economists to help determine which system is then cheapest to use. Williamson (1985) points out that if transaction costs are zero, it is actually impossible to distinguish between competitive markets, oligopolistic markets, planned economies, etc. concerning resource use and efficiency. If TCs are positive, firms or even the state may be cheaper allocation mechanisms than the market.

It seems to have started with Coase's (1937) paper on "The Nature of the Firm". He asked, why are there command systems like firms, if markets are cost-less to run? His answer was that market transactions are costly. In some situations it is less costly to use command within the firm than to operate with exchange within markets. He never used the term transaction costs, but the idea was certainly that of economizing on this type of costs.

It was first 30-40 years later, and after Coase had written his 'complementary' paper on "The Problem of Social Cost" (Coase 1960), that his insights were utilized to start formulating an institutional economics based on methodological individualism and the neoclassical core. The change was to be found in the formulation of the protective belt. Positive TCs were included, and the idea was to develop a theory that could describe how various economic structures differed concerning these costs. The focus on institutions as *constraints* was very much a reflex of this. Institutions defined the 'rules of the game'. They constructed the playground either in the form of single firms, vertically integrated firms, capitalist corporations, different types of contractual arrangements in markets etc.

This tradition of institutional thinking, the so-called new institutional economics or transaction costs economics, is consistently based on the individualist perspective of neoclassical model. This is just the other side of the coin of defining institutions as constraints. The point was not to change the core, but to focus on the second order optimization problem, that of optimal institutional constraints – i.e., those economizing best on TCs.

The classical position

Before the new there must be the 'old' or the 'classic'. Historically, institutional economics developed as a competitor to the neoclassical position as far back as around the turn of the 19th century. Veblen is by many seen as the founding father of institutional economics (Veblen 1898) and the position developed by him and others (e.g., Commons, Ayres and Mitchell) gained a strong position in the economics departments in the US up until the Second World War. A revival has occurred over the last 20 years following the work by, e.g., Schmid (1987), Hodgson (1988), Bromley (1989), Tool (1995), and Samuels et al. (1997). This process implies developments taking the theory beyond that of the 'old'.

The classical institutionalist position emphasizes the *interdependencies* we observe in human life. The behavior of one influences the opportunities of others. This implies that our actions are bound together in very many ways and the theories we develop must reflect this in a fundamental way. To see what characterizes the modern version of classical institutionalism more specifically, I will quite briefly present the stand it takes on all the elements of the core and the standard protective belt of the neoclassical model.

First, we observe that in much of the literature we here approach, the human is seen as *multi-rational* (Hodgson 1988; Sjöstrand 1995). The idea that maximizing individual utility is the only form of rationality finds little support. There is not only individual rationality, but also social rationality (Vatn 2005a). The kind of rationality involved is defined by the meaning and expectations as given by the specific institutional context. In some settings individual rationality is 'the norm', in other contexts taking the interests of others into account is also expected. Hence, evaluating what is considered right and wrong is an alternative form of rationality compared to the calculus of an individual gain.

Second, and implicit in the above, we observe a strong focus on the importance of the *institutional context for the formation of preferences and values* (Samuels et al. 1997) and next price formation (Tool 1995). This theme was raised already by Veblen. The institutional arrangements also influence the evaluation of what becomes efficient (Bromley 1989; Schmid 1987). Efficiency is actually a reflex of the defined rights and the interests that are protected by the status quo institutions. This is the issue we see emanating already in the writings of Commons. It implies that the way in which, e.g., new institutionalists evaluate the efficiency

of institutional structures – the second order issue mentioned above – are easily caught in circularities.

Third, we observe a strong interest in the Veblenian theme of *evolution* (Hodgson 1988; 1996) as opposed to that of equilibrating forces. The issue of internal theoretical consistency of the neoclassical model is further an important issue (Bromley 1989). Actually it is a common feature of the group of authors we are referring to here: Taking consistently care of the properties of institutions is impossible from a perspective which looks at individuals as maximizers creating equilibrium states.

The above points relate one by one to the neoclassical core as defined earlier. Concerning the protective belt, the issue of positive transaction and information costs are, as we have already seen, gradually taken into account by neoclassical economists as it has become the fundamental issue for the new institutionalists. Also, classical institutionalists focus on aspects related to transaction and information costs. The perspective is, however, a bit different from that of the new institutionalists. I think it is right to say that a broader concept of interaction – not just transactions – is best describing what is of interest to classical institutionalists. Hence, there is a focus on various forms of communication, too. Moreover, structures that new institutional economists see as ways to reduce transaction costs – i.e., command structures and hierarchies – are in the literature of classical institutionalism understood also as a function of power relations and as expressions of power (Pitelis 1993). This way issues concerning *power* and the *protection of interests* play a much more fundamental role in studies among these authors (e.g., Bromley 1989; Hodgson 1988; Schmid 1987).

Finally, contemporary classical institutionalists are interested in a wide variety of institutional structures – e.g., property structures beyond that of private property – and these again are not only discussed in relation to efficiency, but also in relation to the issue of power, interest and values protection (e.g., Bromley 1989; Pitelis 1993; Schmid 1987).

Based on the above, classical institutional economists utilize models and perspectives that challenge most of the assumptions of the neoclassical tradition. This implies that the kind of research that is undertaken is also quite different. The focus is much more on understanding specific issues and on trying to capture more of the complexity in real life situations than is possible through a highly axiomatic and reductionist system. This does not imply, however, that institutionalist analysis is just ‘story telling’. There is an ambition also in institutional economics to generalize, but the ambition is to balance that desire with a plea for capturing contextual variation. Its method is hence more abductivist than deductivist (Peirce 1934; Bromley 2006).

The institutions-as-equilibria position

To complete the picture, the institutions-as-equilibria position should be mentioned. It understands institutions as the result of spontaneous ‘games’ without any conscious design or third party enforcement. All institutions are seen as conventions based on a kind of market selection. Aoki (2001) is a core representative of the ‘institution-as-equilibria’ position. He contrasts it with the ‘rules of the game’ theories – e.g., North – who sees institutions as consciously designed by e.g., the state. The ‘institutions-as-equilibria’ position, however, looks at institutions as a result of spontaneous emergence; “a convention of behaviour (that) establishes itself without third-party enforcement or conscious design” (Aoki 2001:7). It is assumed to be a solution supported by everybody, not ‘forced’ by the state, or any other third party.

This demonstrates a rather hostile attitude towards the state and a strong attachment to the idea of individual liberty. Hence, Hayek is a central scholar within this tradition. The existence of state regulations is, however, observed. Since it is a quite pervasive phenomenon, an explanation for their existence is needed. In some situations they are just dismissed

because they are found illegitimate. Sudgen (1986) is among those arguing that legal arrangements merely formalise conventions of behaviour that have evolved out of essentially anarchic situations and reflect codes of behaviour that most individuals impose on themselves. According to this, formal institutions also grow spontaneously out of tradition, if not supported by all, so at least by ‘most’ individuals.

4. Institutional change

In presenting the various positions on what institutions are and do, we have already touched upon how they develop and change. This is a complex field. Some view institutional development and change as mainly spontaneous. Others view them as designed. We often also encounter the divide between institutional change from below and from above. While the institution-as-equilibria position tends to purport all (legitimate) institutional change as spontaneous and from below, both the new and the classical positions put much more emphasis on designed change – i.e., they emphasize the role of various collectives, not least the role of the state.²

Several institutions develop from below. They are often responses to practical problems that people encounter and that spread because they are found to solve the problem in a good way. Many – maybe most – conventions and norms have developed this way. The institutions-as-equilibria position perceives institutions as unintended effects of several independent choices. While this model may explain some institutions, it is mistaken to view institutional change even from below as generally unintended. In the case even of conventions and norms – the type of institutions where spontaneity can offer insights – more close inspections reveals that intent plays an important role. There were a lot of thoughtful processes behind the idea of e.g., the metric system. The codes of good conduct are the result of much deliberation. In the latter case it is not only emphasized that institutions are developed from below. One should also be careful with mixing the (intended) change of institutions and the (unintended or automatic) reproduction of them.

As soon as conflicts are involved, the establishment of an institution to regulate these will warrant some deliberate coordination in the form of collective design of the institution. Concerning the creation of institutions from above, one can moreover divide in two. Among the new institutionalists, the creation of efficiency is seen as the main motivation of such institutional change. The classical institutionalists emphasize much more the role of institutions in defining and protecting interests.

The idea that intentional institutional change is directed towards increased efficiency is certainly valuable when we try to understand the creation of institutions like money, property rights, firms and the state. Here one should especially emphasize the ability of these institutions to reduce transaction costs. Nevertheless, this type of explanation has also its limits. The very concept of efficiency, the rules and conventions by which efficiency is measured, are themselves largely defined by the actual institutional set-up, and efficiency-based explanations will easily end in mere circularities. According to the classical view, the efficiency claims become very much embedded in the assumptions of the analysis.

² There might be a tendency in the literature to equate spontaneous with evolutionary change. I do not use the concept of evolution here, because I think all change must in some important sense be ‘evolutionary’. Certainly, if evolution demands a process that is of the same kind as biological evolution, it must be spontaneous (see also the section on institution-as-equilibria position). If one instead views the ongoing development of institutions as the result of a learning process, where change is a response to new needs, new interests or new insights, there is no reason to not call that an evolutionary process too. It just includes the capacity of humans to perceive, evaluate and construct institutions as part of the evolutionary concept itself. I do not find it reasonable to exclude some of the most typical capacities of human beings from the concept of institutional change. It is rather all these capacities that have made it possible for us to make and follow institutions.

On the basis of this, the classical school emphasizes that whatever institutional structure is formed, it implies the recognition and protection of some values and interests and the denial of others. This goes for all formal institutions like property rights. It is, however, also the case for norms since they define and protect certain values. As earlier emphasized, even the case of choosing conventions may imply to choose between conflicting interests. It should be noted that the capacity of different groups to secure their protection by institutional structures varies. Partly the relevant social groups may lack the political or otherwise necessary power. Partly, they are not able to legitimize their interests on the ground of arguments that are acceptable within the existing political system. Some interests hardly ever need to defend themselves since they are protected by institutions that are built into the basis of the system. This way they become 'invisible' and tend to go unchallenged for long periods.

Nevertheless, no interest gets the ultimate protection. The dynamics of, e.g., market economies create imbalances that may even threaten those having the most advantageous positions. Thus crises appear and offer important drives to institutional change like, e.g., environmental crises. Certainly, the negative effect of crises is still strongest for those at the weak end of the system. They have few capacities to defend themselves. One important aspect of crises in market economies is that they tend to build acceptance for more public 'intervention' or planning – whether public (state) or private (larger firms) – i.e., they legitimize changes that are actually counter to the basic idea of the system itself.

5. Institutions and the environment

Ecological economics focuses on the interplay between ecological/environmental and economic processes – between nature and man. A core issue has been to develop a better understanding of this interplay with the goal to propose policies that secure sustainable use of the natural resource base with all its processes and dynamics. Institutions play a core role in this as they define the conventions, norms and legal rules that structure the relationships between people concerning their access to and use of environmental resources. Therefore, the study of institutions is an important part of ecological economics.

The above observations have relevance at least at four levels. First, we have the issue of how we define which states or development paths should be supported concerning our common natural resource base. This is the issue of preference/value formation and value articulation. Second, we have the topic of how these values are protected through various institutional arrangements. Such arrangements are costly to develop and run, hence the third issue concerns the costs of interacting – that of communicating and transacting – and how institutions influence these. Finally, we have the topic of how institutions shape activities and how we, by changes in the institutional structures, may alter behavior among firms, public bodies and individuals in various settings.

Certainly, these issues are related and must be seen together to get a good representation of the questions involved. In relation to resource use and institutions, the concept of a resource regime is essential. Actually, each resource regime – be it, e.g., firms operating in markets, a common property regime or a state rationing regime – responds in one way or the other to all the above issues. They have ways to articulate which kind of resource use should be undertaken and which interests should be protected. They are characterized by specific interaction costs, and they influence behavior in certain ways.

In the following I will present a short synopsis of core issues and perspectives concerning the four topics mentioned above. I will do so solely from the position of classical institutionalism.

Institutions, the formation and articulation of value

The fact that social processes play a significant role in forming the preferences and values people hold and express, have some fundamental implications for a society's choice of value articulating institutions. First, it implies that we – as society – need to continuously discuss if the institutions we have developed are fostering the kind of values and preferences that we find reasonable or good to support. Second, as individual preferences are socially contingent, they cannot be canonized to the sovereign (unchallengeable) position they hold in, e.g., neoclassical economics. Instead it becomes a core issue to discuss which values our preferences support and how well they can be defended.

This way of formulating the problem has specific importance for environmental issues since the preferences we hold – through the choices they motivate – influence the opportunities for others. The physical environment is a common good and that creates not just physical interdependencies, but also interdependent interests and preferences. Hence the (classical) institutional position emphasizes that evaluation of arguments concerning what is best for society rather than individual preferences/price bids should hold a core position in areas like that of the environment.

As our values and preferences are influenced by what kind of society we have been raised in, institutional structures also influence which values we hold and how we express these. Preferences and values may be articulated via markets, via voting (e.g., elections or referenda), via 'surrogate' markets (e.g., contingent valuation(CV)), via multi-criteria analysis, and various forms of deliberative institutions. A core observation is that what in the end is 'preferred' will normally vary dependent on which of these value articulating institutions (VAIs) have been used (Jacobs 1997).

Each VAI is seen as distinct in the sense that it defines who participates and on what premises (e.g., in which capacity or role). It also influences how participation takes place and what counts as data. Finally, each VAI has rules for how data is to be handled, including how they are to be 'aggregated'. Actually, they are seen as fostering different kinds of rationalities. At one end of the spectrum we have the market focusing on the role of the consumer who influences resource use by allocating money (in the case of CV offering price bids) for various goods/commodities. Individual rationality is fostered, and wealth distribution influences resource allocation directly.

At the other end, we have various deliberative institutions like consensus conferences and citizens' juries, which emphasize the role of the citizen, foster social rationality and dialogue. In these cases the evaluation of arguments is the core process involved and it is not least the quality of the argument and the capacity to argue that influences the results. Moreover, incommensurable/weakly commensurable values can be expressed and reasoned over. Hence, it is argued that the multidimensionality of many environmental values may in this case be taken account of.

While any VAI is characterized by some strong and some weak features – no VAI is ideal – we observe that classical institutional theory emphasizes a core second order issue: that of forming and choosing among different VAIs. This is a choice that cannot be based on efficiency arguments, but rather on reasoning over what characterizes the issues involved – e.g., should they be handled through the process of reasoned dialogue or is a process of individual choice the best. Certainly, such issues are invisible in a model based on the idea that choice is all about individual preference articulation via monetary bids. Rather than seeing deviations from this as a 'failure', institutionalists emphasize that many decisions in a society needs to be fostered by other logics than that of individual calculation of costs and gains. This is especially the case due to the kinds of interdependencies that link peoples' actions.

Institutions and the protection of interests and values

In institutional theory the role of rights – individual or common – is very important. Among these property rights structures like individual, public/state, common and open access are much studied. Property rights define who has access to which benefit streams and under what conditions.

A right is a socially defined relation. It offers individuals or collectives an assurance that other people will behave in a specific way concerning them. Concerning property rights more specifically, a *property* is often thought of as a thing – i.e., a house, a piece of land, a chair etc. Even a property right is, however, a social relation. It is a relationship between the *rights holder* and the *rights regards* under a *specific authority structure* like the state granting legitimacy and security to a specific resource or benefit stream. Hence, rights run from the collective to the individual level. They have to be defined and defended through socio-political processes (Bromley 1989).

Private property is a way to secure individual access, while public and common property in all its various forms is a way to grant access to a defined group. Open access is finally unregulated use. While there are great variations within the groups of private, public and common property as formulated across societies, they are also characterized by some typical features. Private property grants rights to the individual property holder to use the resource in the interests of that individual. In the case of public or common property the right is with the group and competing uses must be decided upon within the group. In all situations non-holders are excluded, be it other individuals or groups. The right of one is the duty of another.

Typically, property rights are defined as rights for the holder to e.g., manage and consume, but with the clause that others should not be harmed. The latter is a core challenge to the standard theory. Taking into account that at least all environmental goods are interlinked – that they are best described as processes that are continuously exchanging energy and matter – all uses become linked and almost no use can be considered unharmed to some interests. Hence, in practice, defining rights implies defining who has the right to inflict harm upon whom.

The law itself may do this. Some uses are defined as illegal while others are not. Also, environmental taxes must be seen as a way to regulate such conflicts. Moreover, an important reason for establishing public or common property may be to institute ownership structures that can treat harm that otherwise could be shifted between different interests. Through these arrangements potential harm becomes a matter to be solved internally among the members of the group.

Each property regime will normally be characterized by different value articulating institutions. Private firms are internally to be viewed as command based structures. Externally they may trade in markets. State owned entities are also command systems, while common properties rely more on consensus building or negotiations. These entities may also operate in markets. Other forms to distribute goods may exist like public rationing or community distribution of various kinds. Except in the case of markets, the above-mentioned regimes demand specific VAIs, and we observe that various forms of those mentioned in the previous section are used.

Over the last two decennia increased interest has been devoted to the issue of complexity in natural and social processes and hence the question of ignorance – often irreducible ignorance – as attached to evolving systems. From a rights perspective this issue can be formulated as who has the burden of proof and how does this burden relate to responsibility for yet unproven harm. Certainly, if ignorance is irreducible, the burden of proof allocation will have decisive influence on resource use. Actually, if the burden is with the potential victim, no *ex ante* restrictions could be defended. If the burden is with the potential polluter, the use of a resource would have to be deemed illegitimate. It cannot be proven to be safe. While ideas like the ‘safe minimum standard’ and the ‘precautionary principle’ are to some

degree institutionalized to handle these difficult issues, we are certainly far away from having solved these problems in any trustworthy way.

Institutions and the cost of communicating and transacting

Both to communicate and to decide requires resources. The greatest argument for environmental taxes – a core neoclassical solution to internalize external effects – is actually the fact that this solution reduces transaction costs (TCs) compared to a market solution. Certainly, if TCs were zero, no other state regulation than granting property rights and establishing markets for trades in externalities would be necessary if we follow the logic of the standard neoclassical model (Coase 1960). Hence, the only reason to favor, e.g., environmental taxes would be because this could reduce TCs and make more externalities become Pareto relevant. Then, however, a lot of issues not emphasized in the environmental economics literature would have to be considered – like considering the trade-off between precision and transaction costs when choosing among policy options.

Here we encounter again an issue where institutional and ecological economics perspectives can greatly nourish each other. From the latter perspective all resources taken into the economy will in the end become waste, which in many cases will create pollution problems. Certainly, given this understanding, it would be cheaper from a TC point of view to regulate the inputs of a resource into an economy as opposed to the harmful emissions coming out of the economy, since the latter are generally far more dispersed and much more costly to observe. Certainly, that solution would be less precise since not all emissions are in the end harmful. Still, it could in many situations be the least costly thing to do. What is lost in precision could be gained by reduced TCs (Vatn 1998). Here we encounter a field of analysis, which is rather underdeveloped even by institutional economists.

However, the greatest challenge also in the case of TCs is how to institutionalize communication structures that can serve us well in a world of global environmental damage. In a fully atomized world like the global market, external costs of even disastrous magnitude might happen just because the costs of transacting with the polluters would be beyond the capacity of any individual or firm. Hence, establishing forums for global communication and negotiation is crucial. Here national states (can) play a core role. Their involvement in this process is, however, ambivalent. They are on the one hand representing the interests of national firms in the global competition over market access and dominance. On the other hand they are our most important means to develop regimes that are able to curb and direct this development in an environmentally friendly way. Certainly, the conflicts between the WTO and various UN conventions (e.g., biodiversity and climate) illustrate this dilemma, too.

According to the above analysis there exists an important asymmetry at the heart of our institutional system: a) the ingenuity and expansion of private firms is supported *ex ante* to foster economic growth, which b) by necessity creates negative environmental effects that are handled *ex post* – that is when harm can be proven. Already Kapp (1971) emphasized this asymmetry. He looked at firms as great machines of cost shifting. Given individual rationality as institutionalized in the bottom line calculus of profits, it becomes as important for firms to be able to exclude costs as to include gains. If externalizing costs like emitting pollutants can go unnoticed for a long time, externalizing them may even be accepted as a ‘right’ in the end. This illustrates the great incentive problems involved in a system of private firms using common resources as if they were demarcatable commodities or free goods.

Institutions and behavior

This brings us to the last issue, how to influence behavior. Given the perspective of the neoclassical position and the new institutionalists, establishing constraints in the form of prohibitions or taxes on harmful behavior is the main solution. Certainly, the new institutionalists

would also emphasize changes in regime structures like e.g., merging the firms that are the victims of an externality with the firms creating it. All these solutions would for sure change the structure of constraints faced by agents, and being faced by the costs of the external effects, profit-maximizing emitters will be expected to change their behavior. A new adaptation becomes the most profitable.

Certainly, these are also accepted mechanisms by the classical institutionalists. There are two major differences, however. First, there is far greater emphasis on the importance of looking into the basic structures of the economy to better understand what creates externalities and hence look for ways to avoid the motive for creating external effects in the first place. Second, since institutions also have the capacity to influence the kind of rationality that becomes involved, it is important not to look at regulations just as constraints, but also as ways to alter the very logic of the situation – its rationality. These issues are certainly linked.

There is a very interesting literature recently evolving not least within economics and social psychology supporting the above ideas. It is based on experiments producing an image of humans quite distinct from the universal model of economic man. Reviewing this literature, Gintis (2000) argues that reciprocity is more typical than selfishness to describe human behavior. I think that message can be taken further. What this literature essentially shows is that our willingness to cooperate – to act in an other-regarding as opposed to a purely selfish way – is dependent on the institutional context (Vatn 2005a). While again entering a field that is both weakly researched and under-theorized, there are strong indications that it is not only payoffs that count. Whether the institutional setting emphasizes cooperation or not has a separate effect on behavior (-Ross and Ward 1996).

There are also examples where paying someone to deliver a good may reduce instead of increase supply (Frey 1997). This so-called ‘crowding-out’ effect exemplifies situations where people have other motives than monetary gains for doing something – e.g., environmental care is found to be a duty or the right thing to do. The logic is that of helping others, supporting a good cause etc. Certainly, if this is the rationale, paying to encourage good behavior runs the risk of ruining the ‘intrinsic’ motivation.

These literatures indicate that other motivations than individual gain may be involved, even fostered through choosing the right institutional contexts. Certainly, fostering ‘intrinsic’ motivations also makes coordination in the field of environmental protection much easier. If everybody thinks about what is best for the group rather than just oneself, the need for specific controls or costly external motivation system is reduced, maybe even removed in some situations.

The above observations open up a whole new research field concerning the role of institutions in emphasizing different rationalities. A better understanding of this is important both for organizing our economy and how to handle environmental conflicts. Expanding our insights about this is not least a job for institutionally oriented ecological economists. Certainly, the present strategy of emphasizing individuality and markets and then regulating these if externalities occur, is a solution that can work well only if externalities are minor or just accidental side-effects of economic activity. Ecological economists know, however, that they are pervasive, and that this calls for quite different strategies. In that sense the above-mentioned experiments offer a great deal of hope.

6. Conclusion

The main idea of this entry has been to show how well the perspective of classical institutional economics fits the needs of ecological economics for a better theory of human action and interaction. Certainly, there are many issues we are not able to treat well yet. I have several times emphasized that too little empirical research is done and that issues are under-

theorized. However, even at this stage, a lot of insight is produced that can be taken right from the shelves. More important, there is a field for us to develop where I am quite convinced that ecological economists have a lot to offer to the development of economic theory more in general. Our focus on multiple values, complexity, irreducible ignorance, matter flows and systems analysis creates a setting that produces questions of great interest also to those mainly concerned with a deeper understanding of institutions. What we hopefully get out of that is a much firmer basis for developing proposals for the necessary future reforms in governance structures – both locally and globally.

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