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The Evolution of Institutions: An Agenda for Future Theoretical Research

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Abstract. This article reviews some theoretical questions concerning the processes of institutional evolution. The necessity of assuming the prior existence of some other institutions, such as language, is underlined. Arguably, the emergence and stability of some institutions may be enhanced by processes of 'downward causation' through which institutional constraints lead to the formation of concordant habits of thought and behaviour. Having pointed to the importance of pre-existing, as well as emerging, institutions, this article reconsiders the possible role of the state in the emergence and maintenance of some institutions, in particular money and property. An agenda for future research is outlined.

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1. Introduction

In a book first published in German in 1871, Carl Menger (1981) pioneered a basic analysis of how institutions evolve. His chosen example was the institution of money. Menger saw money as emanating in an undesigned manner from the communications and interactions of individual agents. He started with a barter economy. As is well known, a problem with barter is the lack of a general 'double coincidence of wants'. To deal with this problem, traders look for a convenient and frequently exchanged commodity to use in their exchanges with others. Once such usages become prominent, a circular process of institutional self-reinforcement takes place. Emerging to overcome the difficulties of barter, a prototype money is chosen because it is a frequently used commodity, and its use becomes all the more frequent because it is chosen. This circular positive feedback leads to the emergence of the institution of money.

In this Mengerian approach, individual preference functions are taken as given for the purpose of this analysis. The direction of analysis is from the given individual to the emergent institution. Menger thus inspired a central, unifying future project in both Austrian economics and the 'new institutional economics': to explain the existence of political, legal, or social, institutions by reference to a model of given, individual behaviour, tracing out its consequences in terms of human interactions.[2]

However, theoretical analyses or simulations of the evolution of money – or other institutions – have proved to be remarkably problematic. For example, in the work of Ramon Marimon et al. (1990) an attempt is made to model the emergence of money with artificially intelligent agents. Their results are highly qualified and partially inconclusive. A single monetary unit does not always readily emerge. Menger's discursive analysis of an emergent convention has proved to be remarkably difficult to replicate in a computer simulation.[3]

Attempts to simulate the emergence of other institutions or conventions show similar difficulties. For example, in a simulation of the emergence of a simple traffic convention Geoffrey Hodgson and Thorbjørn Knudsen (2001) show that artificially intelligent 'drivers' negotiating in both directions a two-lane circular track, do not always shift to the same side of the road to avoid collision. Although this outcome sometimes appears in this simulation, it is not guaranteed, even with foresighted and agile agents.

It is also worth noting that, in the twenty years since the first mass production of the cheap microcomputer, very few agent-based computer simulations exhibiting the emergence of an institution along Mengerian lines have been published. Computing power has become ubiquitous but successful simulations along these lines have been rare. This is again a ground for suspicion that the simulation of convergent outcomes may be much more difficult than previously envisaged. Although convergence is possible in many cases, many simulation runs lead to contrary outcomes, depending on such factors as decision algorithms, parametric adjustments and stochastic errors.

At the theoretical and methodological level, there is no clear consensus among modern researchers as to what would constitute an adequate or acceptable explanation of the process of emergence of an institution. This question is at present under-researched. As a result, a contributor to the 'new' institutional economics found 'the "hard core" of this new research program in disarray' (Sened 1997: 179-80). Oliver Williamson (2000: 595) himself admits that 'we are still very ignorant about institutions.' These assertions do not undermine the value or importance of the work of Menger and others on the evolution of institutions. Instead they point to a number of substantial research questions that remain to be answered. It is the purpose of this essay to make some of these questions and issues explicit, so that further research can address them.

Broadly, three types of question emerge concerning the Mengerian approach to the analysis of the evolution of institutions. The first problem, which will be briefly discussed here, concerns the theoretical impossibility of starting from an institution-free 'state of nature' in the analysis of the emergence of institutions. Several authors have already acknowledged this problem, and a brief discussion is included for reasons of completeness. It is the subject of section 2.

Section 3 considers the role of constraints in institutional evolution and addresses the Mengerian 'bottom up' approach of starting from the given individual. Given the lack of adequate support from formal analyses and simulations, the Mengerian argument may not always be sufficient to explain the evolution of institutions. On this tentative assumption, it is suggested that real world institutional emergence may be aided by the development of concordant habits, particularly as a result of emerging channels and constraints. In some contexts, habit formation may greatly enhance the formation and stability of institutions. It is argued here that this is tantamount to the assumption of malleable preferences, along the lines of authors in the 'old' institutionalist tradition. If such mechanisms exist, then they are cases of 'reconstitutive downward causation' in which institutions and constraints have a capacity to mould individual preferences.[4] This argument is discussed alongside some former claims from the literature in economics that suggest that institutional constraints have more importance than formerly acknowledged.

Section 4 raises again the role of statutory and other forms of intervention in the evolution and sustenance of institutions. One of Menger's aims was to show that institutions could emerge spontaneously from the interaction of individuals alone. He has thus been interpreted as an opponent of the 'state theory of money', as found in works from Aristotle through Georg Knapp (1924) to John Maynard Keynes (1930) and others. However, Menger (1936 [1909]) himself accepted that the intervention of the state may be necessary to maintain the integrity of the monetary unit in some circumstances. Accordingly, and more generally, it remains a question of research and debate as to whether, and if so in what circumstances, the state or other powerful organisations can facilitate the emergence and stability of other institutions. Some preliminary suggestions are developed here. Section 5 concludes the essay.

It must be emphasised that the aim of the article is to review the issues at the current cutting edge of research in institutional economics. The aim is not to provide final or definitive answers. To do so at the current stage of research in this area would be dogmatic and unwarranted.

2. The Problem of Infinite Institutional Regress

We follow widespread practice and define institutions as durable systems of established and embedded social rules that structure social interactions. Language, money, law, systems of weights and measures, traffic conventions, table manners, firms (and other organisations) are all institutions. Such a broad definition of institutions has now become widely accepted. As Menger and others recognise, this broad set of institutions falls into a number of subcategories, including the division between those that emerge spontaneously and those that result from a process involving conscious design.

The work of Menger and many 'new' institutional economists is concerned to show how spontaneous institutions can emerge, simply out of the interactions of individuals, each pursuing their given purposes and preferences. Andrew Schotter (1981: 5, emphasis removed) goes so far as to define 'economics as the study of how individual economic agents pursuing their own selfish ends evolve institutions as a means to satisfy them'. Their emphasis is on a 'bottom up' approach: given a set of interacting individuals, how do institutions then emerge?

The value of this work should not be denied. Substantial heuristic insights about the development of institutions and conventions have been gained on the basis of the assumption of given, rational individuals. The main problem addressed here is the incompleteness of this research program in its attempt to provide a general theory of the emergence and evolution of institutions.

Alexander Field (1979, 1981, 1984) advances a fundamental criticism. In attempting to explain the origin of social institutions, the new institutional economics has to presume given individuals acting in a certain institutional context. Along with the assumption of given individuals, there is always a supposition of some rules of behaviour governing their interaction. What is sometimes forgotten is that in the original, hypothetical, 'state of nature' from which institutions are seen to have emerged, a number of weighty rules, institutions and cultural and social norms have already been presumed. Arguably, these original institutions, roles and norms are unavoidable; even in an unreal 'thought experiment' we can never properly envisage an original 'state of nature' without them.

For example, in attempting to explain the origin of institutions through game theory, Field points out that certain norms and rules must inevitably be presumed at the start. There can be no games without rules, and thus game theory can never explain the elemental rules themselves. As Field (1984) argues, game theory may be used to explain the emergence of some institutions, but to do so it has to assume a significant number of rules and constraints at the outset. Even in a sequence of repeated games, or of games about other (nested) games, at least one game or meta-game, with a structure and payoffs, must be assumed at the outset. Any such attempt to deal with history in terms of sequential or nested games is thus involved in a problem of infinite regress: even with games about games about games to the n^{th} degree there is still one preceding game left to be explained.

As another illustrative example, Williamson (1975: 20; 1985: 143) writes that 'in the beginning there were markets'. However, the market itself is an institution (Hodgson 1988; Loasby 2000). The market involves social norms and customs, instituted exchange relations, and – sometimes consciously organized – information networks that themselves have to be explained. All market and exchange relations themselves involve complex rules and cannot be an institution-free or any other 'beginning'. As Viktor Vanberg (1986: 75) puts it: 'What we call a market is always a system of social interaction characterized by a specific *institutional framework*, that is, by a *set of rules* defining certain restrictions on the behavior of market participants'. Hence Williamson fails to explain the evolution of the firm from an institution-free 'state of nature'. In a type of comparative static approach, he implicitly assumes one institutional framework and explicitly attempts to derive another. Accordingly, the project of starting simply from given individuals is implicitly abandoned.

These examples disclose a problem of potentially infinite regress. Attempts to explain each emergent layer of institutions always rely on previous institutions and rules. According to the Mengerian research programme, these in turn have to be explained. Unless an institution-free state of nature can be formulated or discovered, then the idea of explaining all institutions in terms of individual interactions alone faces an infinite chain of links to be revealed.

There is a fundamental reason why the idea of explaining all institutions in terms of the interactions of individuals, starting from an institution-free state of nature, must be abandoned. This is because *all* individual interaction depends unavoidably on some – at least rudimentary – form of language. Language itself is an institution. Individuals rely on customs, norms and language in order to interact. Interpersonal communication, which is essential to all stories of institutional emergence, itself depends on linguistic and other rules and norms. The institution-free state of nature is unattainable, in theory as well as reality.[5]

Individual choice requires a conceptual framework to make sense of the world. The reception of information by an individual requires a paradigm or cognitive frame to process and make sense of that information. The acquisition of this cognitive apparatus involves processes of socialisation and education, involving extensive interaction with others (Mead 1934; Hodgson 1988). As well as language, these interactions require other, pre-existing institutions. Individual choice is impossible without them. We cannot understand the world without concepts and we cannot communicate without some form of language.

What is being contested here is the possibility of using given individuals as the institution-free starting point in the explanation. Institutions are structures that can constrain and influence individuals. Accordingly, if there are institutional influences on individuals, then these are worthy of explanation. In turn, the explanation of those may be in terms of other purposeful individuals. But where should the analysis stop? The purposes of an individual could be partly explained by relevant institutions, culture and so on. These, in their turn, would be partly explained in terms of other individuals. But these individual purposes and actions could then be partly explained by cultural and institutional factors, and so on, indefinitely. We are involved in an apparently infinite regress, similar to the puzzle 'which came first, the chicken or the egg?' Such an analysis never reaches an end point. It is simply arbitrary to stop at one particular stage in the explanation and say 'it is all reducible to individuals' just as much as to say it is 'all social and institutional.' The key point is that in this infinite regress, neither individual nor institutional factors have legitimate explanatory primacy. The idea that all explanations have ultimately to be in terms of individuals (or institutions) is thus unfounded.

There is thus an unbreakable circle of determination. This does not mean, however, that institutions and individuals have equivalent ontological and explanatory status. Clearly, they have different characteristics. Individuals are purposeful, whereas institutions are not, at least in the same sense. Institutions have different lifespans from individuals, sometimes enduring the passing of the individuals they contain. Their mechanisms of reproduction and procreation are very different.

All theories must first build from elements which are taken as given. However, the particular problem of infinite regress identified here undermines any claim that the explanation of the emergence of institutions can start from some kind of institution-free ensemble of (rational) individuals in which there is supposedly no rule or institution to be explained. Consequently, the project to explain the emergence of institutions on the basis of given individuals runs into difficulties, particularly with regard to the conceptualization of the initial circumstances from which institutions are supposed to emerge (Hodgson 1998).

A reformulated project would stress the evolution of institutions, in part from other institutions, rather than from a hypothetical, institution-free 'state of nature'. Notably, in recent years, a number of significant studies have developed in this direction. Accordingly, Jack Knight (1992) criticizes much of the new institutionalist literature for neglecting the importance of distributional and power considerations in the emergence and development of institutions. Even more clearly, Masahiko Aoki (2001) identifies the problem of infinite regress in much of the former literature and develops a novel approach. He not only takes individuals as given, but also a historically bestowed set of institutions. With these materials, he explores the evolution of further institutions, using game theory. Other recent and significant studies of the evolution of institutions also explicitly take other institutions as given (Howitt and Clower 2000).

The next step, which Aoki recognises but does not fully complete, is to develop a more evolutionary and open-ended framework of analysis. Instead of focusing on just two points in time – the given starting point and the evolved outcome – the next step is to develop an evolutionary approach, in which the emphasis is on the ongoing process of change. We are reminded of Veblen's (1919: 37) search for 'a theory of the process of consecutive change, realized to be self-continuing or self-propagating and to have no final term.'

3. The Role of Constraints

The previous section pointed to a more open-ended evolutionary approach. Once we take a step in this direction, another question is raised. If in principle every component in the system can evolve, then so too can individual preferences. Of course, most economists recognise that preferences are malleable in the real world. But they have often taken the assumption of fixed preferences as a reasonable, simplifying assumption. In contrast, the possibility is raised here that some malleability of preferences may be necessary to explain fully the evolution and stability of institutions.

What is proposed here is a contingent and tentative hypothesis. We may briefly sketch out a possible argument along the following lines. The institutional*izing* function of institutions means that a degree of order and relative stability can be reinforced despite variety and diversity at the microeconomic level. Institutions involve rules, constraints, practices and ideas that can – through psychological and social mechanisms that have to be specified – sometimes mould individual purposes and preferences in some way. This preference malleability could improve the possibility and stability of an emergent institution and overcome difficulties in some cases where institutions fail to emerge.

Such intuitions can be found in the writings of the neglected tradition of 'old' institutionalism. For instance, Wesley Mitchell argues that the evolution of money cannot be understood simply in terms of cost reduction and individual convenience. He maintained that money 'stamps its pattern upon wayward human nature, makes us all react in standard ways to the standard stimuli it offers, and affects our very ideals of what is good, beautiful and true' (Mitchell 1937: 371). Accordingly, the evolution of money changes the mentality, preferences and way of thinking of individuals themselves. This does not mean that Menger's insights concerning the evolution of money are without value, but that they are inadequate. Arguably, they have to be supplemented by an analysis of how market institutions can change individual perceptions and preferences (Bowles 1998). The idea of the malleability of individual preferences pervades the 'old' institutional economics, from Thorstein Veblen to John Kenneth Galbraith.

However, what is lacking in much of this literature is a clear exposition of the causal processes involved. It is one thing to claim that institutions affect individuals in a process of downward causation. It is another to explain in detail the causes and effects. The most satisfactory explanation of the relevant processes in the writings of the 'old' institutionalists was in the writings of Veblen (1899: 190), who wrote: 'The situation of today shapes the institutions of tomorrow through a selective, coercive process, by acting upon men's habitual view of things'.

From this viewpoint, inspired by pragmatist philosophy and habit-instinct psychology, the key element in this process is habit. Habits themselves are formed through repetition of action or thought. They are influenced by prior activity and have durable, self-sustaining qualities. However, habit does not mean behaviour. It is a *propensity* to behave in particular ways in a particular class of situations. Crucially, we may have habits that lie unused for a long time. A habit may exist even if it is not manifest in behaviour. Habits are submerged repertoires of potential behaviour; they can be triggered by an appropriate stimulus or context.[6]

Our habits help to make up our preferences and dispositions. When new habits are acquired or existing habits change, then our preferences alter. John Dewey (1922: 40) thus wrote of 'the cumulative effect of insensible modifications worked by a particular habit in the body of preferences'. Crucially, institutional changes and constraints can cause changes in habits of thought and behaviour. Institutions constrain our behaviour and develop our habits in specific ways. What does happen is that the framing, shifting and constraining capacities of social institutions give rise to new perceptions and dispositions within individuals.

Institutions channel and constrain behaviour so that individuals form new habits as a result. At the level of the human agent, there are no mysterious 'social forces' controlling individuals, other than those affecting the actions and communications of human actors. People do not develop new preferences, wants or purposes simply because 'values' or 'social forces' control them. What does happen is that the framing, shifting and constraining capacities of social institutions give rise to new perceptions and dispositions within individuals. Upon new habits of thought and behaviour, new preferences and intentions emerge.

Elsewhere, this process of habit formation, resulting from institutional channels and constraints, is described elsewhere as 'reconstitutive downward causation' (Hodgson, forthcoming; Hodgson and Knudsen 2001). The crucial point in the argument here is to recognise the significance of reconstitutive downward causation on *habits*, rather than merely on behaviour, intentions or beliefs. Clearly, the definitional distinction between habit (as a propensity or disposition) and behaviour (or action) is essential to make sense of this statement. Once habits become established they become a potential basis for new intentions or beliefs. As a result, shared habits are the constitutive material of institutions, providing them with enhanced durability, power and normative authority.

A pressing issue for future research is the extent to which these mechanisms of habituation play a role in different cases of institutional evolution. What is being proposed here is; first, the possibility of a viable causal mechanism by which institutions can lead to changes in individual purposes and preferences; second, the possibility that such mechanisms may lead to some degree of conformity; and third, the possibility that such conformism may help to strengthen and sustain the institution in question.

Note, however, that the process of conformism involving habituation is quite different from the previous models of Stephen Jones (1984) and Ekkehart Schlicht (1998) in which agents exhibit 'rule preference' or a 'preference for conformism'. In these models the problem of institutional emergence is 'solved' by making some key properties of institutions also the properties of individual preferences. In these analyses the preference for conformism or rules is assumed as given at the outset. In contrast, the mechanism of habituation points to the possibility of such preferences being formed as a result of institutional channelling and constraint. Preferences for rules and conformism are not assumed: their evolution is explained.[7]

To recapitulate, two important and connected issues have been raised here as part of a future research agenda. The first is the possibility of institutions having a reconstitutive effect on the preferences of individual actors. The second is the key element in the mechanism of reconstitution: the formation of habits through the operation of institutional channels and constraints.

These issues relate to some former pieces of relevant research. In one of his earliest papers, Becker (1962) demonstrates that behaviour ruled by habit and inertia is just as capable as rational optimisation of predicting the standard downward-sloping demand curve and the profit-seeking activity of firms. Becker shows how the negatively inclined market demand curve could result from habitual behaviour. Actors 'can be said to behave not only "as if" they were rational but also "as if" they were irrational: the major piece of empirical evidence justifying the first statement can equally well justify the second' (Becker 1962: 4). Kenneth Arrow (1986) has also accepted the possibility of an alternative approach based on habit. Dhananjay Gode and Shyam Sunder (1993) went on to show that experiments with agents of 'zero intelligence' produce predictions that differ little from those with human traders. As in Becker's (1962) model, systemic constraints prevail over micro-variations.

From these previous studies, two conclusions follow. First, the 'accuracy of the predictions' or other familiar criteria for theory selection do not give outright victory to rational choice models. Second, these models suggest that ordered and sometimes predictable behaviour can result largely from institutional constraints. As Andy Clark (1997: 276) puts it: 'The clear indicator of this is once again the fact that the explanatory burden is borne by overall systems dynamics in which the microdynamics of individual psychology is relatively unimportant.' The emergence of settled patterns of behaviour may be either largely independent of the deliberation of the agents, or even dependent on the existence of behaviour dominated by habit or inertia.[8]

The rediscovery of the role of habit in human behaviour and the realisation of the powerful role of institutional constraints, together point to the development of a research agenda focused on the reconstitutive effects of institutions on individuals, and on the degree to which institutional evolution may depend on the formation of concordant habits.

4. A Possible Role for the State

Clearly, there are many different types of institution and they can emerge and evolve in different ways. Some institutions – such as language – appear and develop with little planning or state interference. A question of importance is: what other institutions can emerge in a similarly spontaneous manner? Alternatively, is the assistance of a powerful, pre-existing institution required to create or sustain some other institutions? As well as language, we here consider two more examples: the institutions of money and of contract.

In the earlier versions of his theory, Menger saw the emerging monetary unit as homogeneous and invariant. In this case there is no possibility of quality variation, debasement or forgery. It is as if everyone is assumed to know 24-carat gold when they see it. In reality, however, the emerging monetary unit can be debased or forged. This would affect the process of monetary evolution, as described by Menger. With potential quality variation, the purity and value of the emerging monetary unit may be in doubt. Some actors may notice the high frequency of the trade in a particular commodity, but regard the commodity in question as unreliable and thereby avoid it as a medium of exchange. Such problems, arising from potential quality variation, could subvert the evolution of the monetary unit.

In later discussions of the evolution of money, Menger did raise the question of potential and covert quality variation. But at first he dismissed the problem, saying that money is likely to take the form of precious metals, and these are ‘easily controlled as to their quality and weight’ (Menger 1892: 255). Later, however, in his article on ‘Geld’, Menger recognised that the problem of potential quality variation could be so serious that the state had to play a role. Menger (1936 [1909]: 42) thus wrote: ‘Only the state has the power to protect effectively the coins and other means of exchange which are circulated, against the issue of false coins, illegal reductions of weight and other violations that impede trade.’ Nevertheless, Menger applied this argument to a ‘developed economy’ only. He was reluctant to admit that the state was necessary to protect the integrity of the monetary unit at earlier stages of economic development, and he still clung to his view that, in essence, money was a phenomenon independent of the state. Arguably, however, debasement is a potential problem at the inception of money, not merely at its developed stage.

Of course, another strong institution, or coalition of traders, may be able to overcome some of these problems, as an alternative to the state. However, there is a particular reason why the state is more likely to take this role. While Menger was right to emphasise that many social institutions emerge and develop without a conscious plan, it is often the case that an institution reaches an important stage of development when it becomes consciously recognised and legitimated by other institutions. It is possible that the formation of habits of thought and action that are concordant with the emergent monetary unit are reinforced by other already-formed habits of obedience and deference to the state. Symbol and ceremony have an important part here. Money has self-regulating and spontaneous properties, but typically it is also endorsed by another powerful socio-economic institution. Although state decree alone is far from sufficient to create money, as a commanding social institution at the apex of the legal system, the state is well positioned to take on this declaratory and legitimising role. In legitimating a monetary unit and helping to engender trust in it, the state relies on its crucial symbolic as well as its legislative powers. It is not accidental that the images of monarchs and presidents adorn many notes and coins. Menger’s original account of the origin of money as a purely spontaneous process downplays these declaratory aspects and their symbolic representations. This argument does not imply that the state is necessarily the best or more efficient solution. It suggests that the state is well-positioned to take a regulatory role, and if this develops then the state can make use of its substantial symbolic, ceremonial and legitimatory powers.

If legal or state instruments are necessary to some degree for the full development of money, then these elements could reasonably account for part of the essence of money itself:

they are more than mere accidental, historical appearances. As a result, Menger's argument against the 'state theory of money' – as promoted by the German historical school and others – would lose some of its impact. Furthermore, if the state and other institutions are necessary at the very point of conception of money, then they, along with individuals, have to enter as elements in the explanation of its emergence and development.[9]

It is reasonable to ask the question why the evolution of the institution of money may require some state involvement but, in contrast, institutions such as language may emerge spontaneously. It has been argued elsewhere (Hodgson 1993) that a crucial difference is whether or not an institution has intrinsic error-correcting or self-policing mechanisms. The philosopher Willard van Orman Quine (1960) makes the point that language has an error-correcting regime. Individuals have an incentive to make their words clear. As an essential condition of communication, the coding itself (the signifier) must be unmistakable, even if the meaning (the signified) remains partly ambiguous. In communication we have strong incentives and inclinations to use words and sounds in a way that conforms as closely as possible to the perceived norm. Although languages do change through time, there are incentives to conform to, and thus reinforce, the linguistic norms in the given region or context. Norms of language and pronunciation are thus largely self-policing.[10]

Similarly, some legal rules have a strong self-policing element. For example, there are obvious incentives to stop at red traffic lights and to drive on the same side of the road as others. Although infringements will occur, these particular laws can be partly enforced by motorists themselves. However, things are very different with many other laws and institutions. Laws that restrict behaviour, where there are substantial, perceived net advantages to transgression, are the ones that require the most policing. Hence people frequently evade tax payments or break speed limits. Without some policing activity the law itself is likely to be infringed, debased and 'brought into disrepute.'

Likewise, there are incentives to debase money. With potential quality variation, individual agents have an obvious incentive to use a less costly or poor quality version of the medium of exchange in preferment to the good. Given that traders cannot readily detect all variations, then forgeries and debasements are possible. If they are allowed to endure, then bad money will drive out the good. Money is not self-policing in the same way as language.

Accordingly, any self-policing mechanisms can be undermined if there is the possibility of undetected variation from the norm and there is sufficient incentive to exert such variations. Language and money differ in this respect. The argument for the intervention and policing of the state is thus much stronger in the case of money and some laws, than in the case of language.[11]

We turn now to the institutions of contract and private property. In this case it would seem that without the threat of the legal system and the courts, people might often default on contracts and take what is not theirs. Despite this, there have been several attempts to explain the evolution of property without the involvement of the state or a developed legal system. For example, Williamson (1983, 1985) addresses the latter problem in one of his excursions into legal theory, arguing that property can emerge through 'private ordering', that is, individual-to-individual transactions, without state legislation or interference. In particular, Williamson discusses the part that 'hostages' may play in enforcing transactions. A 'hostage' refers to such arrangements as where both parties to an agreement are committed to non-salvageable costs. The effect is to tighten the bond between the parties and reduce the risk of contractual default. Thus, in the view of Williamson and others, a workable system of property and contract is possible without the state.

Some recent work in economic history has been interpreted as support for a similar view. There are historical cases, in the absence of an over-arching authority, where there has been a problem of contract enforcement in trade between one community and another. There was often no dominant political power or supra-national authority to resolve disputes. For instance, early medieval international trade depended on reputation and sometimes relied on coalitions, guilds, kinship links or religious ties to sustain enforceability (Greif 1989, 1993, 1994; Greif et al. 1994; Landa 1994; North 1991). Even in more recent times, in the absence of an adequate international political or legal authority, such institutional structures have assumed quasi-legal powers (Clay 1997). Several of these cited articles show, using game theoretic models with a few players, how trading coalitions can evolve. These historical studies show that in the absence of a strong (international) legal authority, quasi-legal institutions emerged to help regulate and enforce contracts. The historical evidence suggests that quasi-legal institutions such as trading coalitions are likely to develop in the absence of legal and statutory ones. We can conclude that trade generally may rely on extra-legal as well as legal powers of contract enforcement. However, it would be wrong to presume that extra-legal institutions are always adequate or efficient, or that legal authorities generally play a minor or dispensable role in all trade. The historical existence of trading coalitions does not point to a purely spontaneous and lasting solution to problems of contract enforcement.

Celebrations of the possibility of property and contract without any role for the state are not typical of modern legal theory (Collins 1986). The institutional economist Itai Sened (1995, 1997) has also challenged the notion of property without the state. Sened (1995: 162) notes:

> Like traditional economists, most game theorists systematically overlook the role of law enforcement. .... Many important social institutions do not emerge as equilibria in games among equal agents, but as equilibria in games among agents who control old institutions and agents who challenge such institutions with new demands. In particular, governments play a crucial role in the evolution of institutions that protect individual rights.

In his extended critique of the notion of property without law, Sened (1997) argues that true individual rights are established only when a territorial institution establishes its monopoly over the use of force. Sened's argument departs significantly from that of Robert Sugden (1986: 5) and others, who argue that legal codes 'merely formalize ... conventions of behaviour' that have evolved out of individual interactions. However, to accept the role of the state in the evolution of property and contract is not to romanticise this institution. Sened sees the state not as a benevolent and disinterested legislator but as an institution whose members pursue their own interests.

Sened develops a version of the Hobbesian 'social contract'. This 'social contract' is not just between individuals in agreeing laws and rights, but also between the individuals and the state. For Sened, governments weight the benefits of granting rights against the cost of enforcement. He writes:

> Governments do not erect such structures out of benevolence or moral concern. They grant and protect rights in order to promote their own interests. But in doing so, they fulfil two crucial social functions. The function of maintaining law and order that is a necessary condition for economic growth and affluence, and the function of arbitrage between conflicting interests. (Sened 1997: 123)

In addition, Sened shows the limitations of the aforementioned type of game theoretical model involving a few agents. With a larger number of players it is more difficult for individuals to establish mutual and reciprocal arrangements that ensure contract compliance. If trading coalitions do emerge, then these themselves take upon state-like qualities to enforce agreements and protect property. In a world of incomplete and imperfect information, high transaction costs, asymmetrically powerful relations and agents with limited insight, powerful institutions are necessary to enforce rights. These institutions result from a complex bargaining process. Sened uses an n-person prisoners' dilemma to show that the introduction of a government, enforcing rights, can often improve on a sub-optimal outcome.

It is an open question as to whether another strong institution, apart from the state, could fulfil this necessary role. However, it is not to endorse or glorify the state if we start analytically from the likelihood and reality that a state will emerge and analyse its possible role on the process of establishment of property.

Individual property is not mere possession; it involves socially acknowledged and enforced rights. Individual property, therefore, is not a purely individual matter. It is not simply a relation between an individual and an object. It requires a powerful, customary and legal apparatus of recognition, adjudication and enforcement. Such legal systems make their first substantial appearance within the state apparatuses of ancient civilisation. Thus, nearly four thousand years ago, on the famous stone of Hammuraby, the Ancient Babylonians carved their detailed code of laws, prescribing penalties and rights. Since that time, states have played a major role in the establishment, enforcement and adjudication of property rights.

At the same time, the development of any state apparatus carries the omnipresent danger that individual private property would be wilfully appropriated by the state, perhaps using the ancient norms and precedents of communal tenure. The state has the capacity to appropriate, as well as to protect, private property. For private property to be relatively secure, a particular form of state had to emerge, countered by powerful and multiple interest groups in civil society. This meant that a pluralistic state with some separation of powers, backed up by a plurality of group interests in the community at large. With such a balance of power, a framework of constitutional law could be established, in which the interests of both the state and the citizenry could be protected to some degree. According to this line of argument, the emergence of a powerful institution like the state is a necessary but not a sufficient condition for the protection of property and other individual rights.

5. Conclusion

The aim of this article has been to raise some theoretical questions concerning the processes of institutional evolution. While Menger's basis argument concerning the possibility of spontaneous institutional emergence remains a powerful heuristic, some key problems remain. The first problem is methodological, and it attaches to any attempt to explain the emergence of institutions starting from an institution-free state of nature. It has been argued here that any such attempt is confounded by the unavoidable necessity of assuming the prior existence of other institutions, such as language (Hodgson 1998). It is also noted, however, that this problem is now becoming widely recognised, leading to a significant re-orientation of the research programme of the 'new' institutional economics. For instance, a significant feature of the recent work of Aoki (2001) is to take some institutions as given at the beginning of the formal analysis.

Once it is recognised that human activity can only be understood as emerging in a context with some pre-existing institutions, then we are more able to focus on the effects of institutional constraints and 'downward causation' upon individuals, as well as to understand how interactions between individuals give rise to new institutional forms. The suggestion here is that the emergence and stability of some institutions may be enhanced by processes through which institutional channels and constraints lead to the formation of concordant habits of thought and behaviour. These arguments point to a more open-ended approach to the evolution of institutions, downplaying static comparisons in favour of more processual, algorithmic analyses. In considering an open-ended evolution of both institutions and individual preferences, such arguments are redolent of the 'old' institutionalism, although a detailed specification of the mechanisms of 'downward causation' was often lacking in that literature. Links are also made with other results that underline the role of constraints in systemic behaviour, such as Becker (1962) and Gode and Sunder (1993).

Having pointed to the importance of pre-existing, as well as emerging, institutions and constraints, the fourth section of this article considered the possible role of the state in the emergence and maintenance of some institutions, in particular money and property. It was argued that reasons for such a role might exist when the institution lacks adequate inherent self-policing mechanisms. While the discussion here provides provisional rather than final conclusions, it points to an important future research programme that will consider in more detail the role and limitations of the state in institutional evolution.

Strikingly, with the decline of the research programme that attempted to explain all institutions from individuals in an original, institution-free 'state of nature', some of the former boundaries between the 'old' and the 'new' institutional economics have been eroded. In addition, reconsideration must be given to some of the arguments of the German historical school, concerning the role of the state in buttressing and maintaining some institutions. In particular, Sened's (1997) forceful argument that a state apparatus is necessary to sustain the institution of property is an unacknowledged vindication of an aspect of the historical school case.

The re-emergence of institutional economics in the final quarter of the twentieth century is one of the most important and fruitful developments in social science. It has been the aim of this article to review some of the more pressing issues of theoretical enquiry and raise some questions for future research.

Notes

1. *Address for correspondence:* Malting House, 1 Burton End, West Wickham, Cambridgeshire CB1 6SD, UK. Tel: (44) 1223 290 251.
2. Among a large number of possible examples of this type of approach see Ullmann-Margalit (1977), Schotter (1981), Hayek (1982) and Sugden (1986).
3. Despite the apparent simplicity of this monetary argument, analyses, experiments and simulations based upon it are remarkably complex (Jones 1976; Kiyotaki and Wright 1989; Oh 1989; Wärneryd 1989, 1990a,b; Hodgson 1993; Marimon et al. 1990; Duffy and Ochs 1999). Klein and Selgin (2000) report an apparently successful Mengerian simulation where agents select the medium of exchange from a set of homogeneous commodities in a Polya Urn process. Instead of making choices based on preferences, each agent is obliged to select randomly an exchange medium at each trade. Each commodity is equally desirable to all agents, equally durable and equally physically convenient as an exchange medium. The presence or absence of the double coincidence of wants does not figure in their model. Neither does a highly desirable commodity that would be perishable or inconvenient as a medium of exchange. Hence Klein and Selgin give an inadequate picture of how a monetary unit emerges from barter.
4. The concept of 'reconstitutive downward causation' builds upon the earlier concept of 'downward causation' in psychology and biology (Campbell 1974; Sperry 1969, 1991).
5. Bovill (1958) notes that the Moors and Ashanti traded salt for gold without a verbal language, by placing their products on opposite banks of the river and withdrawing, taking the merchanidise back if the other offer was not deemed to be satisfactory. Nevertheless, even in this case there was a form of communication with shared interpretations and meanings. Otherwise trade would not be possible.
6. Note that Becker's (1992) definition of habit is very different, amounting to serially correlated behaviour rather than a programmed disposition or propensity.
7. In some respects, this proposed approach is closer to the work of Boyd and Richerson (1985, ch. 7), where the evolution of a propensity to conform ('conformist genotype') is discussed, as well as its effects.
8. For a discussion of the connection of these ideas with recent developments in psychology see Twomey (1998).
9. For a further discussions of this issue, and the related controversy between 'Metallists' and 'Chartalists', see Bell (2001), Ingham (2000) and Wray (2000).
10. Of course, this does not exclude the possibility of cumulative error and 'drift' in the evolution of language.
11. However, there has been some limited institutional regulation of language in France, and spelling reforms have been inaugurated (relatively successfully) in the Netherlands and (less successfully) in Germany. Much earlier, after achieving its independence, some changes in the spelling of English were established in the United States.

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