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ENVIRONMENTAL NORMS, SOCIETY, AND ECONOMICS

by

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ABSTRACT

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Environmental norms seem to be on the upsurge everywhere. Norm-orientation is, however, neglected in neoclassical economics which is fixed on homo economicus as the model of human behaviour. The paper addresses the question whether homo economicus needs to give way to a norm-oriented concept in environmental economics. This question is tackled in an interdisciplinary and evolutionary approach. Using economic concepts, forces are identified which are detrimental to or which promote environmental norms in the process of civilisation. This investigation provides some clues on the likely importance of environmental norms in a future ecologically oriented society. These clues provide in turn one answer to the fundamental question posed, whether the neoclassical concept of human behaviour will likely remain or cease to be the 'standard' tool in environmental economics. Rather than tackling the question in greatest generality the analysis takes recourse to an example: the problem of the commons. The commons is particularly suited for this investigation because it is well roamed by all the disciplines which are of relevance for the undertaking.

INTRODUCTION

In the new era of ecological concern we are permanently admonished to exhibit environmental concern and act in accordance with it. For example, we are advised to save energy, to boycott environmentally harmful products and buy green ones in the stores, to avoid waste creation, to recycle almost everything, to book holidays in resort hotels friendly to nature, and once there to stay on the hiking trails or skiing slopes. This list could go on and on. Environmental norms, rules which restrict environmentally harmful behaviour or which prescribe ecologically friendly actions seem to be on the advance everywhere.

Norms govern individual behaviour. They do so, however, without being given hierarchical authority and without taking recourse to monetary incentives. Environmental norms may therefore appeal as an alternative to the classical environmental management approaches of command and control and market incentives.

Governing individual behaviour in an ecological context, environmental norms are a natural object of investigation in environmental economics. Alas, environmental economics does rarely touch on environmental norms. In economic analyses they remain a missing link between human behaviour and the environment. In this paper this missing link is partially explored. This is done from a rather special perspective though.

Although the analysis borrows heavily from outside economics, it is undertaken from well within an economist's perspective. In particular, a central question to be tackled is whether the neoclassical model of human behaviour, homo economicus, remains a viable model for analysing human-made ecological problems and solutions thereof. Put differently, the paper investigates whether and, if so, how much leeway neoclassical environmental

economics must give to other disciplines in the breeze blowing in the direction of norm-orientation.

This question can perhaps be tackled in several ways. The approach taken up here is evolutionary and relies on an analysis of societal organisation and cultural change in the process of civilisation. The empirical motivation for this admittedly heroic approach is the frequently voiced claim that our pre-industrial ancestors and our aboriginal co-inhabitants of earth in the Fourth World have been and still are able to manage their environment well while we moderners are not. In face of this claim, I endeavour to explore the possible role of environmental norms as sources of well-management as well as the driving forces behind their fate in the process of civilisation. This analysis relies on well established economic concepts such as efficiency and economic organisation.

The purpose of this effort is to find some key determinants of the likely future societal organisation as it pertains to the environment and to hazard an educated guess whether it will be rather norm-oriented or not. It is hoped that this can also give an answer to the question raised whether homo economicus can remain a viable concept in environmental economics.

On this occasion I will also comment on the normative debate. In the wake of growing ecological problems this debate has also set in in an ecological context. The normative debate takes up the question which organisational form a society should choose. There are three alternatives: the hierarchy, market organisation and the commune. The hierarchical alternative relies on command and control in enforcing compatibility of individual behaviour with societal objectives. Market organisation relies on economic incentives, whereas the communal alternative relies on norms. These societal alternatives have a natural counterpart in a society's organisation of its relation to nature. And

any future ecological constitution will have to draw on either of these alternatives.

Much of the investigation is undertaken by example. This example is the problem of the commons. The commons is an attractive object of this investigation, in particular because it is well roamed by the disciplines which are relevant for our analysis: history, anthropology and empirical, experimental and theoretical economics. We shall start, however, with a brief sketch of human behaviour in the commons as it is to be predicted if we employ the neoclassical concept.

HOMO ECONOMICUS IN THE COMMONS

Accepting that the environmental problem is a scarcity problem, the scarcity manager, homo economicus, can be taken at least as a first approximation to a model of human behaviour in the ecological context. The neoclassical model of human behaviour presupposes that a representative human has well defined and stable preferences. He or she is modelled as a well informed, consumption-oriented maximiser. Neoclassical economics is therefore a theory of crafty egoistic decisions.¹

So what is the economist's prediction of the behaviour of homo economicus in an ecological context? In order to answer this we must fix what the

¹ This concept has attracted overwhelming criticism (most notably from the school surrounding Simon (1957) as well as fierce support ensuring its persistence (e.g. Friedman and Savage, 1949). In maintaining the standard assumption of full rationality I do not want to belittle this criticism nor is it meant as the best approximation to reality. Rather I consider it the best approximation (because it is identical) to the model of human behaviour employed in mainstream economics. Maintaining the full rationality postulate permits us to concentrate as succinctly as possible on the challenge to homo economicus which is posed by what is the primary concern of this paper.

ecological context is. In that I abstain from a comprehensive definition. Instead I want to mention three properties which are common to most environmental problems.

The first property is the negative externality of human action. The second is the discontinuity of environmental processes at certain thresholds. The third is the irreversibility thereof after having been pushed beyond a threshold.

A good illustration of an ecological context is the commons. The classical commons is a meadow jointly owned by several independent herdsman. The ecological context is straightforward. The grazing of one herdsman's cattle diminishes the grazing conditions for others (negative externality). Once a certain threshold of deterioration has been surpassed the biotope collapses (discontinuity). There is no direct way back after a collapse (irreversibility).

So what is the behaviour of homo economicus in the commons? The economist's answer has been bloomingly given by the biologist Garret Hardin in his famous paper "The Tragedy of the Commons":

"Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. ... Explicitly or implicitly ... he asks, 'What is the utility to me of adding one more animal to my herd?' ... the rational herdsman [he is a homo economicus (E.M.)] concludes that the only sensible course for him to pursue is to add another animal to his herd. And another, and another But his is the conclusion reached by each and every herdsman sharing the commons. Therein is the tragedy. ... Freedom in a commons brings ruin to all." (Hardin, 1968: p.1244).

Put succinctly and in relation to the environment in general, the prediction is that the rational human will overuse the environment compared to the social optimum. This prediction is rather general. It can be almost always made when homo economicus is applied to any environmental problem. This is because the underlying structure is most often the same. It does not pay for the individual to cooperate with others even if others behave in the interest of the common environment. Seen through the spectacles of a neoclassical economist the environmental problem is the notorious prisoner's dilemma. The ecological facts as we happen to perceive them seem to overwhelmingly support this prediction.

For the normative debate two things follow from an economist's bleak outlook on the fate of the environment. First, economics identifies in the excessive use of the environment a societal deficit and thus evokes the normative debate. And second, economics takes position in the quarrel about which of the three organisational alternatives to choose.

Separated by a paradigmatic quantum jump from the commune, economists sympathise with hierarchies and the organisational alternative of voluntary exchange. Perhaps surprisingly, however, in between those two, hierarchy wins at least in a first round.

This is because the market oriented environmental constitution critically hinges on the existence of exclusive property rights. Therefore, economics puts the initially unclaimed environment on a silver plate for appropriation by the state. The state is then called upon to execute rights over this new property through the application of a suitable environmental policy. However, there is disagreement which environmental policy should be chosen.

One camp supports a hierarchical orientation of environmental policy while a second favours an exchange oriented one. Under the first approach the state maintains the property rights over the environment and defends these

rights against the desires of its subjects by way of command and control. Under the second approach the state sells the titles to the usurped environment to the private sector through a system of environmental taxes or tradeable permits.

Contributions to this debate are legion. As of today it is undecided. However, if the importance of the environment continues to grow as it did in the past the outcome surely will have a constitutional dimension. Not only will the green constitution be minted. It may even have an impact on the political constitution and the normative debate in general.

For example, I have argued elsewhere (Mohr, 1990) that the command and control approach to ensure the application of environmental safeguards in new projects can be a challenge to the trichotomy of powers. This can arise because in constitutional democracies environmental bureaucracies are nested in a legal system which guarantees to potential project operators the right of appeal in court if unsatisfied with a bureaucracy's permission decision. If this right is effective, property rights over the environment are in fact non-exclusive and commonly held by potential project operators and the environmental bureaucracy, with a pivotal role reserved for the courts. The environmental cake will then be divided in a bargaining process, with courts playing the role of an outside option.

It can be shown that in this situation environmental policy is fraught with deficiencies. In general it is socially suboptimal, it can be completely ineffective or it can have an adverse effect on welfare. This policy problem can be resolved, however, by forsaking the effective right of appeal. Under this green constitution there remains therefore a conflict between the pursuit of environmental policy and the maintenance of the political constitution. If the environment is becoming increasingly scarce this conflict may become increasingly pressing.

Let us return into the commons and let us glance critically once more at the economists gloomy prediction emanating from the application of homo economicus. Is the environment always excessively used? Does freedom in a commons necessarily bring ruin to all?

Doubts are warranted. Although this prognosis is supported by what we observe on the modern commons, in a historical or in a cross-cultural perspective matters are less straightforward. In the past, property had frequently been held as a commons and cultural history is rich in examples where the commons had not been ultimately ruined but had sustained the prosperity of communities (see for example Dahlman, 1980; Runge, 1981). This historical "success" in mind, for some the commons is even a paragon of social virtues and cooperation, and a model for the resolution of environmental problems (Swaney, 1990).

In providing an explanation for this success story authors make a distinction between free access and common property (Ciriary-Wantrup and Bishop, 1975; Runge, 1981). According to this distinction open access refers to a situation in which the environment can be exploited by an unlimited number of users without limits. Common property refers to a situation where a well defined group of right-holders uses the environment in accordance with well established rules. Making this distinction, Hardin's tragedy is claimed to be, in fact, a tragedy of free access whereas under the governance of common property welfare can prosper.

A similar observation has been made by anthropologists in the Fourth World. In autochthonal societies the commons is a frequent form of property. These "primitive" societies have developed sophisticated rules of social conduct which prevent the tragedy from coming down on them (e.g. Berkes et al., 1989; Buck, 1989; Casimir and Rao, 1991; and MacCay and Acheson, 1987). Homo economicus seems to invite us therefore to improve on itself.

An economist's retort could be that cooperation can emerge in a prisoner's dilemma even if homo economicus is the representative player. One only needs to confront players with the same game ever again. In such a supergame perfectly rational and egoistic players cooperate if suitable punishment strategies are played (Friedman, 1971). However, if the repetitive character of the game is combined with the vulnerability of the opportunity set to non-cooperative behaviour such as is the case in the commons and in almost every environmental problem, even punishment strategies can ensure only a moderate degree of cooperation (Lewis and Cowans, 1983).

Laboratory experiments come to a similar conclusion. In Axelrod's (1981) famous experiment, living persons cooperate in a repeated prisoner's dilemma situation. And, interestingly, simple strategies such as "tit-for-tat" are particularly successful in furthering a player's payoff and in bringing about cooperation. Axelrod's experiment creates the social conflict of the prisoner's dilemma. However, it does not create the ecological conflict in the commons.

In another experiment by Spada and Ernst (1990) the Axelrod experiment has therefore been repeated in an ecological context. In game theoretic terms this experiment was set up as a dynamic game reminiscent of formal models of common fisheries (e.g. Levhari and Mirman, 1980). The more the environment was used by subjects at one time the less of it was left next time. Although compared to Axelrod's experiment the need to cooperate was even more pressing and although cooperation would have made sustainability possible the emergence of non-cooperation was frequent. And, perhaps surprisingly, it was the otherwise so successful "tit-for-tat" strategy which all too often triggered an early devastation of the commons and left all subjects in a payoff desert.

Both the theoretical and the experimental approaches tread on common ground. Both identify in the repetitiveness of social interaction a relief from

the unavoidability of non-cooperation. Both identify in the commons a source for the emergence of non-cooperation despite the repetitive nature of social interaction. Both fail to predict the emergence of cooperation as we know it from history and from aboriginal societies.

The failure of these approaches to predict cooperation in their stylised representation of human behaviour in an ecological context invites us to inquire into the possible causes for this failure. Although a number of different reasons can be imagined for each of them (see for example the game-theoretic justification of cooperation given in Runge (1981), but see also Guttman (1982) and Palmquist and Pasour (1982) on this) there is at least one reason which seems to be common to both.

Both lack the relevance of social norms. There is no need to testify further to this in the case of the mathematically oriented approach. But the experimental approach seems also in want of a suitable representation of environmental norms. Subjects in interactive laboratory experiments know about the test character of the exercise, they know about the fleeting nature of their relationship, and just like homo economicus in a formal "experiment" they feel obliged to follow the "rules of the game" which frame their payoff function artificially and which determine the opportunity set of their actions. Social norms escape traditional formalisation. My hunch is, they also escape the laboratories. Economics, environmental or not, theoretical or not, experimental or not, leaves a bit of a vacuum in that respect.

ENVIRONMENTAL NORMS

In economics humans are consumption orientated maximisers. Sociology models humans as norm-oriented conformists. With conformists the third contestant for victory in the normative debate - the commune - becomes a sudden

alternative. The fate of the environment does now hinge not on the egoism of individuals. It is determined instead by their desire to avoid social conflicts.

The role of norms is to ensure the survival of the commune. The commune relies on the separation of insiders and outsiders. Norms alleviate the distinction between them. Norms also increase the costs for insiders to free-ride and desert the commune (Douglas, 1989, p. 50).

Here the normative debate sets in again. This time, however, it comes in the form of moral campaigns of the green movement. There are innumerable examples of it. The campaigns pressing consumers to discriminate against one-way beverage containers, to separate garbage at home and to boycott tropical timber are but some.

Environmental norms sustain a societal structure in which the common environment is shared by equals. The admissible bounds on its use or its proper use within the set of feasible actions is determined by environmental norms. These define the demarcation line between the environmental conscious insiders and the group of outsiders which blunder the environment. And coherence amongst equals is sustained by appealing to the self-image of insiders, chastening the occasional and banishing the recalcitrant sinner.

Environmental norms appear to be on the advance everywhere. Are we on a march into an environmental commune? Will the normative debate be decided in favour of the communal alternative? Or, put differentially, will the norm-orientated conformist defeat the consumption orientated maximiser?

To answer these questions it helps to look at the efficiency properties of environmental norms and at their genesis and evolution. Presumably, a reasonable hypothesis is that the chances for the communal alternative to end up as winner in the normative debate will be rather small if environmental norms tend to be inefficient. Implicitly, the admittedly contestable presumption is that rationality is a key element in guiding the debate.

Elster (1989) has argued that norms need neither be efficient nor welfare improving. This view can be upheld in the case of environmental norms.

For example, a cost-benefit analysis of one-way and refill beverage systems, taking account of all environmental costs, would have to count amongst others the larger waste volume of one-way systems against the higher energy input of refill systems due to additional weight and transportation. Taking all this into account, non-composite one-way containers can come out better than a refill-system with a short life cycle of containers or with long transportation routes. These considerations are typically neglected in anti one-way campaigns.

A further striking example of the inefficiency of environmental norms is the separation of garbage at home. In some countries (e.g. Germany) a growing number of municipalities are providing for the collection of separated household garbage (paper, glass, plastics etc.). Material is separated and supplied by households, basically on a voluntary basis. It is supposed to be eventually recycled. In terms of quantities supplied and collected, this norm is a success. However, due to the satiation of recycling outlets municipalities are frequently forced to deal with separated garbage in the ordinary, i.e. thermal or kerbside way.

To continue, a norm to boycott tropical timber reduces the value of rainforests as a reproducible resource, encouraging deforestation for purposes of ranching and alternative uses. Therefore, and on the contrary of what a boycott does to rainforests, some authors even suggest a cartelisation of tropical timber exporters (e.g. Rauscher (1990)). According to this rationale, a boycott is indeed counter-productive.

Not only do we observe inefficient environmental norms quite frequently. Looking at their evolution even suggests that they need not necessarily yield to efficient ones. Even more than that, some of the driving forces behind

their evolution appear to systematically favour inefficient norms and oppress efficient ones.

For example, Sugden (1989) has claimed that norms can spread by analogy.² If an analogy can be drawn between an area in which a norm is valid and another area in which it is not yet valid, its validity can expand to the latter area too. For example, an analogy can be drawn between fruit juice containers and milk containers by reference, if this is the case, to the one-way nature of both. With this analogy a norm not to buy juice in one-way containers can cover milk as well.

It is evident that a mechanism for the systematic diffusion of efficient norms does not exist if norms spread by analogy and if they were inefficient in the first place. However such a mechanism fails to exist even in those cases in which norms are efficient where they had been in force originally. For example, an analogy between fruit juice containers and milk containers to the effect of boycotting the use of the latter neglects the fact that the former are made of composite material to protect it from the acidity of its content. Fresh milk containers need not be and usually are not made of composite material. But it is the composite nature of containers which is substantially increasing environmental costs as, with the exception of aluminium-plastic composites, they can hardly be recycled (Rat von Sachverständigen für Umweltfragen, 1991, p. 245).

The purpose of norms to separate insiders from outsiders presumably plays also some part in their diffusion. The intuition is that norms which

² Sugden investigates norms which are solutions to coordination games. Although these are certainly only a subset of all norms, his explanation for the dissemination of norms appears more general than this rather special reason for their existence.

make this separation easier than others have better chances to thrive. This implies, however, that evolutionary successful norms will often be oriented towards the enforcement of superficialities which will have little to do with the complicated ecological and economic causes of an environmental problem. The correctness of our behaviour is therefore measured by the maximum speed of our cars instead of by their emission properties, or by the size of our garbage sacks instead of by their content. This criterion for a successful dissipation of norms does not cater to efficient ones either. Instead it is the ones which are oriented towards superficiality, and hence which are often inefficient, which can thrive.

Both criteria, the ease with which an analogy can be drawn and the ease with which insiders can be distinguished from outsiders, have an important property in common. They depend on a common experience by all who are supposed to obey a norm as well as by those who are supposed to control obedience³. This puts a tight lid on what environmental norms can achieve in a society. They can spread and prosper in the realm of daily life. They may be able to govern behaviour within a professional circle. But they are squarely inadequate in providing outside control in the world of special knowledge and activities. In addition, demands on control mechanisms in terms of efficiency are likely to increase (exponentially?) with the complexity of what is to be controlled. Hence, a trust in environmental norms in controlling high tec or high sci activities such as gene technology belongs to the realm of wishful thinking.

³ See Sugden (1989) for this claim in the case of the first criterion. It is self-evident that this claim can be upheld in the case of the second criterion too.

As specialised knowledge and activities remain unchallenged from the control of environmental norms and because in those areas in which environmental norms can develop there is little that lets efficient norms evolve, it seems safe to conclude that their role in the organisation of our society's relationship to its environment will remain bounded. In answering the questions posed earlier it seems therefore also safe concluding that we are neither on a march into an environmental commune nor will the consumption oriented maximiser in a model of human behaviour will have to be kicked out.

This does not imply that norm orientation is a quirk that can be left aside in all economic analyses of environmental problems. It may be important in cases. However, for an investigation of human behaviour within the environmental constitution as it can be sketched on the basis of above considerations the classical hypothesis of economics, pitted against norm orientation, seems acceptable more often than not.

THE DECLINE OF ENVIRONMENTAL NORMS AND THE DOOM OF THE COMMONS

There remain some important questions unanswered. Why had our own commons been well managed way back in the past and why is it not today? Today, why does the commons remain a well maintained place in the Fourth World but not in the Third, Second and First?

These questions can be given a dynamic interpretation. In this interpretation the questions are what happened to our commons on our own travel through time and what is happening to the culture of the commons in the process of adaptation of aboriginal societies to the modern world? Answers to these questions may provide an explanation to the observation that the process of civilisation does harm to the commons (Franke and Chasin, 1980).

I shall discuss three possible explanations from various disciplines for the passing away of the culture of the commons. They are complementary and mutually enforce each other.

The first draws on above analysis of the evolution of norms. The civilisatory process is or comes about with a process of specialisation which puts aside ever more activities from the world of daily life and protects them from effective control through norms. The commons is increasingly influenced by these specialised activities and the once protective shield of environmental norms is weakened. This explanation ascribes the decline of environmental norms and the doom of the commons to organisational changes which are detrimental to the maintenance of environmental norms.

The anthropologist Michael Jochim (1981) has given a different explanation. It hinges on a behaviouristic model of humans in an ecological context. Just as in both the cases of homo economicus and the norm-oriented conformist, operative behaviour dictates human actions (op. cit. p. 17). But the link between behaviour and its consequences is neither created by an (arbitrarily complicated) utility maximisation nor is conformity the sole objective. Rather, behaviour is orientated towards the anticipated effects of positive and negative reinforcement. Human behaviour is therefore modelled in reminiscence of the famous rat experiments in which test animals avoid or choose a certain action, depending on whether this action triggers punishment (negative reinforcement) or reward (positive reinforcement).

Jochim makes a strong case that the environment provides a plethora of reinforcement. Thus he explains behaviour in an ecological context. In this framework, environmental norms can be interpreted as codified environmental reinforcers.

This model provides an explanation for the doom of the commons in the civilisatory process if in market economies, as Jochim argues, "the strength

of cultural (monetary) reinforcement is greater than most consequences of activities themselves in perpetuating behaviour" (op. cit. p. 207). Environmental norms representing direct consequences of activities in the incentive system lose in importance and finally pass away in the wake of the emergence of markets.

This explanation also ascribes a decisive role to organisational change. However, in providing a model for the link between outside stimulus and individual behaviour the doom of the commons is predictable not due to the emergence of norm-free sanctities but due to a retreat of environmental norms in areas where they had traditionally been strong.

A third explanation for the doom of the commons can be found in economics. It draws on the distinction between free access and common property. This distinction is formalised in the literature in terms of the number of decisionmakers in the commons. Under free access there is a potentially infinite number of agents in the commons. In this case all incentives to invest into the commons vanish (Scott, 1955). Under common property there is only a given and finite number of agents in the commons. In this case investment incentives are positive although socially suboptimal (Levhari and Mirman, 1980; Stevenson, 1984). This suggests a detrimental effect of an increase in the number of agents in the commons on the individual incentives to invest into the maintenance of it.

I believe the environment has undergone a transformation in the process of civilisation comparable in its effects to a large-scale increase in the number of agents in formal economic models of the commons. Whereas the classical commons and the associated environmental problem was shared and affected by only a few, the modern commons is shared by many. This is not because the old meadows and hunting areas are now being treaded on by more and more people. Rather, civilisation has brought about new long distance impacts

which collect a much greater number of humans in a much larger single commons. Ozone depletion and global warming are obvious but rather extreme points in case.

The common environment seems to have undergone a transformation from being held as a common property to being exploited under free access. In the wake of this transformation the once present incentive to invest in its protection has disappeared.

Just as the others do, this explanation ascribes the doom of the commons to a change in individual behaviour. However, this change is neither due to the emergence of norm-free sanctities nor to the retreat of environmental norms where they had been traditionally strong. Rather it is due to the emergence of new commons which are in above sense "much too large".

Arguably our commons has been, and with respect to "advancing" autochthonal societies is being knocked out by all three forces at once. These forces are unlikely to disappear again. On the contrary, as civilisation continues to "advance" they are likely to grow stronger. For the normative debate it follows from these considerations that the need for an environmental constitution presumably will grow alongside. As two of these forces are born out of a secular decline of environmental norms the environmental constitution will instead have to rely to great extent on hierarchical or market orientation.

CONCLUSIONS

The paper provides an evolutionary analysis of environmental norms. The purpose is to get some clues on their future importance in an emerging ecologically oriented society. It is hoped that these clues also provide an insight into the issue whether in light of a seeming resurrection of environmental norms the standard economic model of human behaviour,

homo economicus, will have to give way to a norm-orientated concept in environmental economics.

I have argued in the main body of the paper that the neoclassical analysis of the commons, employing homo economicus, fails to predict the maintenance of and cooperation in the commons as it occurred and is occurring in aboriginal societies. This failure was attributed to the neglect of environmental norms in the economic analysis of environmental problems. In an investigation of environmental norms it was subsequently argued that they neither need be efficient nor will efficient norms necessarily emerge in an evolutionary process. Furthermore, additional factors were identified which are systematically detrimental to the survival of environmental norms in the process of civilisation. This suggests that environmental norms will likely play only a minor role in an environmental constitution as it seems to emerge in our ever more ecologically oriented society. As a relieve to conservative economists (like myself) this also suggests that the standard model of human behaviour, homo economicus, will remain a robust tool in predicting human behaviour in an ecological context.

Attesting a not too bright future to environmental norms does not imply that they are unworthy of economic investigation. On the contrary, I take the above investigation rather as a modest beginning of such an analysis than the end of it. For example, it would be interesting to look into the role, if any, of environmental norms in green markets in the light of the persistent verification and signalling problem. It would also be interesting to investigate which environmental problems could be resolved most efficiently by the application of suitable norms. A scope for environmental norms as a policy instrument could thus emerge. If it will, I might have to back out again somewhat from the position I developed here. After all, the analysis in this paper takes for granted that the evolution of environmental norms is

independent of deliberate policy intervention, a hypothesis which invites us to a closer look by itself.

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