AARES 2000 Sydney
44th Annual Conference of the AARES
January 23-25, 2000

The economics of ethical behaviour and environmental management

Steven G.M. Schilizzi

Agricultural & Resource Economics
The University of Western Australia
Nedlands (Perth), WA 6907
Steven.Schilizzi@uwa.edu.au

ABSTRACT

Ethics and economics have long been viewed, if not as being incompatible, at least as being at odds with each other. This has often translated in the field of environmental policy and management into radical opposition between supporters of economic performance and environmentalists. It has seemed that the ethics of economics and that of environmental preservation were themselves at odds. The discussion has opposed utilitarian and duty-based philosophies. Ultimately, the firm manager, especially when under financial pressure, must decide between keeping the firm in business and doing the right thing for the environment. This view of things is now itself at odds with reality. One needs to explain why an increasing number of firms, both big and small, are setting up environmental management systems, making environmental investments and reducing risks over and beyond legal requirements, even when the benefits are not at all obvious, even in the long run. Is it that economics and ethics have not only become compatible, but lend support to each other? If so, how is this possible? What are the social processes at work? And can we come up with a theoretical framework that can describe this new reality? Even at the philosophical level, are utility based and duty based ethics as contradictory as they seem? This paper investigates these questions and shows how, philosophically, the two ethics may be efficiently combined and how an analytical framework may be devised to explain society's new 'ethical incentives' and self-moralising processes. A new role for government emerges.

JEL Classification Numbers: Z10, A12, L20, M20, Q29

1. Introduction

When, around 1990, the head of Nissan USA decided to completely reorganise car production at the plant with a zero waste objective and succeeded (McInerney & White, 1995); when Volvo's president decided to issue an environment report with clearly stated responsibilities for the future (Volvo Environment Report 1998); when the Swiss 'Ethos' foundation decided to select its investments according to the social and environmental performance of companies (Ethos 1999), and when members of the British USS superannuation pension scheme fight for a 'more ethical policy for the investments made on our behalf' (Ethics for USS, 1999), when these and many other such decisions were made, what exactly was motivating them?

In general, we considere the broadening of business concerns to include environmental management in light of what may be termed a utilitarian approach. That is, we try to highlight the potential benefits, for the firm and its direct stakeholders, of implementing an environmental management, reporting and auditing scheme. It is true, according to many reports (Donaldson 1992, McInerney & White 1995, and Donaldson & Gini 1996 describe several cases), companies have been able to increase their net benefits by doing so; but often, more as a happy by-product than by design. In all the examples cited above, the motivation was not only economic: it was ethical. This paper proposes to examine this other dimension of business and the environment.

Actually, the question is twofold. Why are many firms committing themselves to environmental responsibilities, and why are many other firms not doing so? Is it that there is a conflict between economics and ethics, between environmentally clean business and profitability? Is market competition a serious hindrance? What are the grounds for the exclusion by the Domini 400 Index of 150 companies from the Standard & Poor 500 list? This paper will show that the answers to these questions strongly depend on how costs and benefits are defined and accounted for, within what framework, what time horizon, what organisational structure. It will show that today environmental concerns, not only those of the civil society, but also those of the international business community[1], are changing social values. These in turn are changing social expectations from business and thereby business ethics itself. However, environmental concern is perhaps but the latest force in changing business ethics. As the next section shows, business ethics has changed over time.

This paper is organised as follows. The second section, after a brief historical reminder, highlights the main features of what has recently developed as the field of environmental ethics, and

[1] For example, through implementation of the ISO 14000 series of norms.

provides some insights into its foundations. A third section examines environmental ethics from the corporation's perspective and how it relates to economic imperatives. A fourth section considers the current changes in the social forces of moralisation. A fifth section asks if environmental investments are ethical investments, and concludes on the significance of the processes merging ethics and economics. An appendix offers an illustrative case study.

2. Foundations of environmental ethics for business

Historical overview

Business in its modern sense, and business ethics with it, is a product of the industrial revolution of the 18th and 19th centuries in Europe and America. The use of the concept for periods before that time is therefore not quite appropriate. Nevertheless, there certainly had been, in practice, an implicit business ethics in commercial affairs, where certain values were upheld at least in times of peace. The Egyptians, the Phoenicians, the Greeks and, in the later Middle Ages, the Italian and Dutch merchants, as well as the tradesmen of the Hanseatic League, all followed specific deontologies. Because of the locally integrated and sometimes tribal nature of trade, business also included many social concerns, mainly through the distribution of income and support of members throughout the community, the clan, or the family. Environmental concerns seem, however, to have been the exclusive concern of the public authorities. In ancient Rome, and in the Paris and London of the Middle Ages, it was by the town councils, or by Imperial or Royal decree, that tanneries had to relocate because of the pollution they created. This may be attributed to the fact that, although pollution could be locally severe, it was not perceived as a general social problem.

One reason for the lack of a general perception of pollution as a social problem was its small scale, compared to the healthy forests and countryside dominating the landscape in those days. Another reason seems to be the partitioning of society into social classes where the distribution of costs due to pollution fell almost entirely on the more destitute classes. This coincided with the wealthier classes holding all the power and the lack of education, indeed of any literacy, of the poorer classes. The conceptualisation of pollution as a social problem could therefore only have been voiced by the ruling classes who had no immediate contact with the problem, and so no incentive to give it any further thought[2]. In this context, concern by the public authorities seems to have had two possible origins. The local pollution, like that from tanneries, was such that it affected more people than just the tanners themselves and their families. Another possibility was that the pollution affected the image and prestige of the town and its rulers. Such seems to have been the case for Paris as early as the 13th century, and in particular under Louis XI in the 15th.

[2] Of course, this is a highly simplified account that historians could easily question in many particular cases; nevertheless, it does seem to reflect the general state of affairs of pre-industrial times.

The impacts of social stratification and discrimination on environmental concerns carried over into businesses as well as out amongst nations. Within firms, the filthier and more unhealthy tasks were left to the socially disadvantaged, whereas management or ownership of the business belonged to the socially privileged. This was particularly marked in the farming and mining enterprises. This is still to a large degree true today, but the relationships between workers and management, as well as between them and the environment, has changed and is highly regulated by law and the public authorities. Amongst nations, colonialism certainly had its own ethics of resource exploitation. Lack of concern by dominating nations for the dominated was even harsher than that between social classes within one nation. Colonialism is, to a large extent, a long history of resource plundering and environmental disruption, even though there may have been local exceptions. In the economist's terms, environmental and social externalities were, in both domains, totally disregarded.

The industrial revolution had an ambiguous effect on business, ethics and the environment. On the one hand, it emphasised profit as a key economic goal and greatly aggravated environmental impacts, especially in a coal-driven economy. On the other hand, far more subtly, it generated the first inklings of environmental ethics, in relation with human health and living conditions. According to Max Weber, the 19th century German sociologist, modern business ethics as early as the 17th century was influenced by the Protestant ethic, mainly from countries around the North Sea. It has been argued that the Biblical heritage is one of domination of Nature by Man, though this assertion is open to interpretation: "Grow and multiply, and submit the creatures of the earth". The heritage of pre-Christian religions amongst the Celtic and Germanic peoples, strongly revering primitive forces of nature, may have somewhat distorted the biblical heritage, but if so, in two opposing directions: increased economism and nascent environmentalism[3]. The relationship was heavily blurred by social discrimination, as mentioned earlier, so that the environmentalist potential of the North Sea heritage had to wait for the social and economic progress, as well as excesses, of the 20th century. At least, this is one possible interpretation of its voicing in the 1960s and its appearance as a social force in the 1970s.

Environmental ethics

Two basic concerns for environmental ethics

One may ask why a business firm should be concerned with the environment if it does not directly affect its profitability? After all, as was mentioned in the previous section, business has in the past mostly considered it was the government's job to deal with environmental impacts. This attitude does

[3] See for example Jones & Pennick's book, "A History of Pagan Europe", 1995, and how pagan pre-Christian nature-worship may be one of the roots of deep ecology – a phenomenon of any magnitude only in the Celtic-Germanic influenced cultures of northern Europe and north America. For a broader geographical perspective, see R.S. Gottlieb (1996): "This Sacred Earth: Religion, Nature, Environment".

have a rationale in that the environment has largely been considered as a public good[4]. However, the firm's impact on a public good, termed an 'externality' by economists, also backfires on the firm in that the impact reduces social welfare. An externality, negative in this case, appears when a firm causes a reduction in the well being of others without having to compensate them for this reduction. If there are no mechanisms that will force the firm to deal with the externality, then the firm will make money at the expense of reduced social welfare, unless it mitigates such behaviour by means of an ethical stance.

Concern for the environment includes concern for others through the externality effect. But concern about others today is not all. More important may be the concern for future generations who will inherit the resources, the air, the oceans and the ecosystems we shall have bequeathed to them. One can quote the French writer Saint Exupery: "We do not inherit the earth from our ancestors, we borrow it from our descendants". For many environmentalists and environmentally sensitive people, the environment itself has value for what it is. Plant and animal species can be seen as having a right to life even if this costs us, and business in particular, money. The natural environment can be seen as an essential part of our basic life support systems. Without it, our well being and indeed our very survival are at risk. Accordingly, environmental ethics involves two basic concerns: a social concern in terms of equity or fairness, and an ecological concern in terms of ecosystem integrity or health (Pannell & Schilizzi, 1999).

The equity concern is twofold. With respect to the present-day generation, environmental impacts from economic activity affect the social distribution of welfare. Pollution by an industry, while contributing to the firm's wealth, will decrease neighbouring populations' visibility and sunshine, clean air and water; it will affect their health and quality of life. Because however those affected are present and, theoretically at least, can react to such impingement on *their* rights, some form of social compensation or remediation can be implemented. The firm can be sued and made to reduce, or stop, its polluting activity, or pay compensation to the victims, or any other arrangement. Alternatively, public action can be taken against the firm, consumers can boycott its products, local constituencies can activate political measures that will reduce the firms' future rights. There are forces tending to 'internalise' the externality created by the firm; that is, make it take its share of the cost imposed by its activity. However, this will only eventuate if the firm is locally not too powerful, either as a monopoly or otherwise[5].

---

[4] A public good has been defined as being non-excludable and non-rival. It is non-excludable if there is no practical way to exclude some people and not others, so as to be able to discriminate, typically, between those who pay for it and those who do not. The benefits of atmospheric pollution abatement are non-excludable. A good is non-rival if consumption by any one individual, or group of people, does not reduce availability for other people. Again, cleaner air is non-rival in consumption, since my breathing it will not reduce its availability for you. Biodiversity is non-rival in consumption as long as 'consumption' is not destructive, as with photo safaris; it is rival in consumption if it is destructive, as with hunting safaris. Local biodiversity can be excludable if it lies mostly within national parks for which only those who have paid an entrance fee can enjoy it. Most environmental ethical issues have to do with public goods.

[5] Negative externalities are at the heart of environmental economics. See for example T. Tietenberg's very accessible *Environmental and Natural Resource Economics* (4th ed., 1996).

When future generations are affected, no such arrangements are possible. Unless government steps in and imposes constraints on business (laws and regulations, extra costs), the interests of people in the future will not be catered for. Economists call this a case of intertemporal externalities: making people in the future bear the costs of present decisions. However, business managers can unilaterally decide to deal with the issue, either by restraining their harmful activities, or by investing in a way as to reduce harmful impacts. They can, at a cost, change activity; they can invest in damage abatement equipment, in environmental expertise; they can even reconsider the whole organisation of their production process, as was the case, mentioned earlier, for the US Nissan plant in the early 1990s.

Concern for species' rights to life and for ecosystem integrity or health can be viewed in two ways, not necessarily exclusive of each other: as a form of naturalism or as a form of humanism. The "deep ecology" movement represents the first case. It basically claims there is absolute intrinsic value in safeguarding our natural environment, irrespective of its economic value to humans[6]. The second case reflects the non-economic values people place on protecting the environment. In the past twenty years or so environmental economists have put a lot of effort into investigating just how valuable to different people are different natural assets, such as clean air and water, biodiversity, land quality, old growth forests and wildlife[7]. Although both approaches may end up promoting environmental management and investments, they also represent two conflicting worldviews. The conflict arises mainly as a function of the costs, or forgone benefits, incurred in protecting or repairing the environment.

Anthropocentrism and ecocentrism

These two worldviews come under the name of ecocentrism and anthropocentrism. The former is nature-centred, while the latter is human-centred[8]. Anthropocentrism reflects the ancient Greek philosophy that "man is the measure of all things", particularly of what is valuable and what is not. Thus, if nobody cares about the spotted owl in Washington State, or about the blue whale in the Antarctic, then what reason is there to spend money, or forgo production income, to protect their survival? The ecocentrist view is that even if nobody cares or is willing to forgo income for that purpose, it is still our

[6] Militant ecologists often adopt this view and hold it against our present-day "economism". See e.g. M.E. Zimmerman (ed., 1998): "Environmental philosophy: from animal rights to radical ecology"; Drengson & Inoue (1995): "The deep ecology movement: an introductory anthology"; L.E. Johnson (1991): "A Morally Deep World: An Essay on Moral Significance and Environmental Ethics"; and A. Witoszek & A. Brennan (1999): "Philosphical Dialogues: Arne Noess and the Progress of Ecophilosophy". An economic view is given by R. Atfield's article (Intrinsic values) in *Ecological Economics* (1998) 24: 163-8.

[7] This is a huge field in rapid progress. It pertains to non-market values of environmental assets and how they can be identified and measured. Several techniques of non-market environmental valuation have been actively investigated, such as Contingent Valuation, Travel Costs and Hedonic Pricing (see e.g. Hanley & Spash, 1996: Cost-Benefit Analysis and the Environment). A key, though controversial, concept is that of 'existence (or non-use) value', which measures the value of a resource to an individual irrespective of the use she may derive from it – typically, just from knowing it is being preserved for the future. A wilderness area with dangerous predators may have high existence value but low use value for anyone except hunters.

[8] See H. Rolston III (1994): "Conserving Natural Value" for an overview.

duty as a society, and for everyone of us, to protect life in any form as well as life support systems: land, water, and air quality. As it happens, the two worldviews, which deeply affect both business and public attitudes towards the environment, are unlikely to find grounds for agreement, for they represent two traditionally opposite ethical attitudes: utilitarianism and the ethics of duty or respect. This leads us to the foundations of environmental ethics.

Foundations of environmental ethics

Two main foundations

The brief account given above on nature-centred vs. human-centred ethics has its roots in a deeper philosophical divide, which opposes utilitarianism to what is known as deontologism or duty-based ethics. Utilitarianism is based on self-centred interest, whereas deontologism is based on the respect of moral rules, the compliance with which is seen as a social duty. Utilitarianism can be somewhat broader than this, as it does not necessarily centre on an individual's interests, but on those of any social organisation that functions as a private body, such as a business corporation[9]. It is an "us first vs. them first" kind of opposition, or one between an 'exclusive us' and an 'inclusive us'[10].

Academics of various disciplines (philosophers, psychologists, sociologists, economists) have extensively debated around this issue, largely because it appears so important in environmental decision making, investment decisions, and business regulation and taxation. It also impacts, as will appear later, on the definition of 'cost' for society and for private business, and in particular on what is to be considered as an environmental cost and how to measure it. More fundamentally perhaps, the opposition seems to question the very foundations of our economic system, based on a utilitarian worldview, which, for some, has become inadequate to address environmental and, more generally, sustainability issues[11].

The need and limitations of a utilitarian ethics for the environment

Utilitarian theory has a complex history on which we shall not dwell[12]. The key point of interest for our purpose is that it leads to the principle of consumer sovereignty, based on the free choice of

---

[9] Reference is made to any social organisation that functions "as a private body" to possibly include government agencies, public utilities or state-owned firms that have in whole or in part 'forgotten' their public purpose and mostly seek to maximise some sort of positional rent, based on power or information.

[10] Some languages in Asia and Africa, where communitarian values are traditional, clearly distinguish between these two forms of "us" by using two different words.

[11] See J.P. Marechal (1991), "The Price of Risk: economics challenged by the environment" (in French), Presses du CNRS, Paris.

[12] Jeremy Bentham in 19th century England fathered a utilitarian philosophy that today appears as one of its extreme forms. He considered that pleasure maximisation was the fundamental social goal and proposed a calculus of pleasure that today appears unworkable. The basic difference with modern utilitarianism as it underlies economics is that whatever is maximised, 'utility', is left to each individual or organisation to define. The only requirement is that it reflects some form of self-interest which, without being necessarily selfish, is nonetheless

individuals, or private organisations, reflecting their own interests and preferences. The important points are, firstly, that each individual and private organisation freely decides what it wants as its goal, and everyone else, doing as much, respects this rule; secondly, that this state of affairs is good for society, and indeed leads to the best possible outcome. This combination of democratic freedom and free competition lies behind Adam Smith's (1776) invisible hand. It is also at the root of what is known as welfare theory, which underlies benefit-cost analysis. The idea is simple: decision as to what is socially most desirable, for example to preserve or not a wilderness area, is worked out by finding an expression of individual or private valuations for and against such preservation, then aggregating (summing) them to obtain a social preference ordering. Expressions of valuation can be in the form of free monetary contributions or support of an extra tax levy.

The idea is simple, but its implications are far from simple. First, Kenneth Arrow (a Nobel in economics) showed in the 1950s that no social aggregation of individual preferences remains unaffected by the specific procedure used for aggregation[13]. Secondly, it is unlikely that individuals and private organisations will take into account the interests of future generations, or the impact of wilderness and biodiversity losses on the integrity of ecosystems, even if such lack of interest can backfire on other economic activities, on people's health and welfare. Thirdly, there is evidence that when it comes to ethical issues such as environmental preservation, social equity and moral standing, people's preference structures are not always such that they are willing to make trade-offs. Especially religious-based values (respect for life; earth is God's, not man's) tend to produce what is known as lexicographic preferences. Typically, individuals refuse to even consider receiving monetary compensation (or any sort of compensation) for loss of life or of environmental assets. From this "willingness to accept compensation" perspective, such losses can be viewed as having infinite, absolute value, and must be avoided "at all costs". Underlying such an attitude is a duty-based ethics at odds with utilitarianism. However, when the valuation principle is reversed and based on willingness to pay, no such infinite valuation is possible, because people's (and governments') budgets are limited. The "at all costs" requirement is hard to honour when such costs are very high and someone must pay them. Clearly then, though utilitarian ethics cannot, it seems, be avoided, it is also insufficient to address all aspects of environmental decision making[14].

---

egocentric. Thus, on top of anthropocentrism, economics adds egocentrism (broadly defined, as it can include some forms of altruism).

[13] This result, known as Arrow's impossibility theorem (1951), generalised Condorcet's paradox, which showed that if individual A prefers x to y and B prefers y to z and C prefers z to x, you obtain inconsistent social choices. There is no social choice procedure that does not affect the outcome (e.g. electoral system).

[14] On lexicographic preferences and the environement, see e.g. M. Lockwood's articles 1996, 1997, and 1998; A. Sen's (1995) paper on preference structures and ethics; work done around the idea that people and organisations have double moral standards, as market operators and as citizens (Blamey, Common & Quiggin, 1995, 1996, resting on earlier investigations by Bergson, Tintner and Samuelson – see Kohn, 1993 for a summary.). On the insufficiency of utilitarianism with regard to the environment, see A. Brennan (1995), "The ethics of the environment".

The need and limitations of a duty-based ethics for the environment

Deontological or duty-based ethics are closely related to what is known as Kantism, in reference to the 18th century German philosopher Immanuel Kant. Kant elaborated a system of ethics based on the respect of 'generalisable' rules. His method, known as universalism, was to have decision-makers ask themselves: if everyone did as I do, would I still support this decision?[15] Presumably, pollution and hazardous waste disposal would not pass Kant's generalisation test. Also, presumably, if our decisions today lead to mass extinctions, deforestation, soil erosion and atmospheric pollution, and future generations are poorer by as much, then our decisions would not pass Kant's test either. Insofar as we respect the rights of future generations, then it is our duty to refrain from any decision and action that will impinge on their rights. Kantism, therefore, and any duty-based ethics, is based on a balanced system of rights and duties[16].

A weak form of deontologism considers propositions of the form: if you value future generations, then respect their rights and refrain from impinging on them. Kant referred to this form as the hypothetical (or conditional) imperative. A strong form of deontologism is: you must value future generations and therefore respect their rights by refraining from impinging on them. This is Kant's categorical imperative. Both forms have problems when it comes to implementation[17]. The weak form comes up against the question: "What if we do not value future generations?" The strong form will only be listened to by those who are already trying to find an ethical ground for their decisions. It will not affect anyone else. In fact, both forms address the question: how can we make an ethical decision? Neither addresses the issue of how a decision maker can be made to ask that question[18].

There are other implementation problems. In the case of industrial waste disposal, a duty-based ethic supposes known the effects or impacts on the environment, on ecosystems and on future generations. Without such knowledge, the rule becomes unwieldy. Instead, risk assessment is involved, and the problem becomes one of knowing how much is risking too much, not necessarily an easier task. This leads to the second point: if, under imperfect knowledge, the avoidance of any risk at all is

---

15 For a recent exposition relevant to business, see N. Bowie's book (1999) "Business Ethics: a Kantian Perspective". For a more general exposition, see e.g. Sullivan's (1994) "An Introduction to Kant's Ethics".

16 This version of kantism is highly simplified and reflects what has been called 'popular kantism' as opposed to 'authentic kantism', more faithful to Kant's original writings, where the question is rather "if everyone did as I do, could I still rationally will my action to be universal?" (Elster, 1989; Wolfelsperger, 1999). The popular version is usually used by economists (see e.g. the study of the voluntary provision of public goods by Laffont, 1975 and Bordignon, 1990), although Sugden (1991) and Mongin & d'Aspremont (1998) achieve better authenticity. However, both interpretations run into problems as soon as practical implementation is considered.

17 John Harsanyi, since 1958, has however been advocating "Ethics in Terms of Hypothetical Imperatives". See J. Harsanyi (1976), pp. 305-16.

18 As J. Hare (1996) puts it ("The Moral Gap: Kantian Ethics, Human Limits, and God's Assistance"), Kant defines a moral demand (e.g. value the rights of future generations) and then proceeds to investigate the sources of moral supply: where can individuals get what is needed to satisfy the moral demand? Religion is one source, but there are others. Hare argues that none work. Strangely, nobody seems to have asked about the sources of demand, a question we shall ask later.

prohibitively costly, we are faced with, like it or not, a utilitarian trade-off. It is very unlikely, and it would be hard to justify, that a government or a corporation refrains from an otherwise highly valuable activity for the sake of a highly uncertain risk to the environment and to future generations. Some might consider the whole issue of global warming to be in this category, because of the uncertainties of the impact of economic activity on climate change. Others might consider the loss of biodiversity to be in this category, because of the uncertainties of the impact of this loss on the well-being of future generations[19].

This conundrum is well known in studies of environmental policy and has led to the so-called Precautionary Principle. This principle requires decision-makers to abstain from any activity that may lead to *irreversible* damage *unless the social costs of doing so are unacceptable*[20]. The relevance of this principle here is that it can be viewed as grounded in a duty-based ethics of the categorical imperative type, with a utilitarian proviso. It can apply equally to private business as to public authorities, insofar as they choose to abide by it. Two points need be noted. Firstly, the uncertainty of environmental impacts is not a sufficient condition; the possible irreversibility of the damage is also important. Secondly, the command "thou shalt abstain" is tempered by a proviso ("unless"). Unfortunately, this proviso can end up making this policy guideline inoperative and unwieldy. In spite of several efforts, there seems to be no way of specifying just how high social costs must be to be considered as "unacceptable"[21]. More importantly, this unacceptability is a utilitarian value, grounded in the economics of the situation.

Two-stage value systems

The view of utilitarianism given above is a highly simplified one. It corresponds to what has been called act-utilitarianism, and is based on the 'utility' produced by a particular decision. Another, broader version, called rule-utilitarianism, is also more subtle, and has been advocated by some economists (Harsanyi 1976, 1980)[22]. It requires that those rules be chosen that consistently yield the outcomes with highest (social) utility. Rule-utilitarianism is thus a two-stage ethics. The first stage consists in choosing a rule, or set of rules, according to utility-based ethics; the second stage consists in abiding to such rules on a duty-based ethics so long as they perform their average social utility-maximising role. In Kantian terms, such obeisance is a conditional imperative.

---

[19] To be complete, one must put in the balance what was obtained in the process of causing biodiversity loss etc., given that whatever it was, it must have appeared more valuable, at the time, than biodiversity. For instance, new knowledge and new technologies may have been produced that off-set the loss in biodiversity.

[20] Ciriacy-Wantrup in 1952 was the first to formulate this principle.

[21] There was a debate in the 1970s between Krutilla, Fisher and Smith, of Resources For the Future, Washington D.C., on the one hand, and R.C. Bishop on the other, as to how this indeterminacy was to be resolved. One of the latest attempts is by Randall & Farmer (1995), but they also stop short of a solution.

[22] The idea was first put forth by J.O. Urmson in 1967 in “The interpretation of the moral philosophy of J.S. Mill”, published in P. Foot: “Theories of Ethics”, Oxford Univ. Press (pp. 128-136), and later taken up by R.B. Brandt in “A Theory of the Good and the Right”, Oxford U.P., 1979.

In contrast, application of a Precautionary Principle is the sequence in reverse. It consists in first abiding by a general rule, and secondly in tempering its respect by a utility-based rule.

It is not clear at this stage which sequence is to be preferred. Each seems appropriate for different situations, but, to our knowledge, the problem has not been investigated. Game theory is renewing the approach to these questions (Harsanyi, 1992). What does appear clear is that two ethical systems, which in isolation can lead to opposite outcomes, actually need to be combined to overcome the limitations of each. As will be seen in the next section, this is not without implications for corporate environmental ethics.

Changes in social expectations

Fifty years ago, consumer boycotts, aggressive media campaigns, and political pressures would have been unthinkable for issues like Shell's Brent Spar accident or the impact of its oil extraction activities on Nigerian ecosystems and local populations. The same could be said for the impact of pharmaceutical research and testing on animal welfare, the insufficiency of risk abatement investments in hazardous activities involving radioactivity or toxic chemicals, or even the failure by a large firm to report on environmental impacts of production processes protected by patents or intellectual property rights. Clearly, social expectations about corporate behaviour have changed, especially since the 1980s. These expectations relate to the environment, but also to bioethics and animal welfare, human health, social inequality, and the legacy to future generations.

Such changes in social expectations have not only led to direct consumer and political action, but have also had a legal impact. In most countries today, corporate or business law, as well as civil law, include large sections on corporate responsibility and accountability for the environmental, and thereby, social impacts of their activities[23]. The advent of the concept of 'responsibility without fault' can be attributed to environmental legislation and regulation[24]. The same can be said of the concept of 'retroactive responsibility', as implemented in the American CERCLA system for the environmental clean-up of polluted sites. Suddenly, firms may be facing millions of dollars in liabilities for past industrial activity[25]. Worse, if a company cannot meet the costs of its liabilities, its lenders and insurers will be held liable, a chain-reaction effect leading to the controversial 'judgement proof' issue[26]. These developments reflect a change in social norms and values, and have themselves led to the emergence of new financial and insurance instruments for dealing with environmental risks and liabilities, whether past,

[23] Enmarch-Williams (1996), "Environmental risks and rewards for business".

[24] See e.g. Anderson (1998), "Development of environmental liability, risk management and insurance in the United States: lessons and opportunities." One may also consult the *Journal of Environmental Law*.

[25] See Laufer (1993), "Firms facing major risks: on the uncertainty of social norms" (in French), L'Harmattan, Paris; and "Environmental Law: how the game has changed", LAAMS Publications, 1991, Australia.

[26] See Shavell (1986), "The Judgment-Proof Problem", and Pitchford (1995), "How liable should a lender be? The case of judgment proof firms and environmental risks".

present or future. We can also attribute the creation of the ISO 14000 norms to a growing concern in the more industrialised countries over corporate environmental responsibilities around the world. How social responsibilities may affect economic efficiency was examined as early as 1973 by the Nobel laureate Kenneth Arrow[27].

The business implications for environmental management are considerable. It is now in the interest of corporations to integrate environmental management into their overall business strategy, and to be much more forward looking than they have been in the past[28]. Although a matter of judgement, it is probably fair to say that, overall, the change in social expectations have brought about a change in business ethics, and that environmental concerns have been instrumental in the process.

3. Ethics *versus* economics, or ethics *and* economics?

Two conflicting sources for environmental governance?

There has been much debate as to what exactly determines the behaviour of a firm. The answer, as one might expect, differs according to viewpoint. Standard economic theory answers: profits. Business management answers: keeping shareholders happy. Marketing experts answer: increasing market shares. Business organisation theorists answer: increasing market power. Social scientists answer: customs and institutions. The list could be extended easily. As always, there is an element of truth in each answer, and they are not necessarily incompatible. For our purpose, if we concentrate on the primary motivations of environmental decision making in business, we may ask whether economics is the sole motivation, or whether ethics play, or should play, some role. Whatever the answer, we must remember that all firms operate within a specific, though changing, institutional, legal, political and social context, and this context impacts on their behaviour. By corporate governance is meant, therefore, the determinants of how the firm reacts to, or makes use of, its specific context for achieving its own goals[29].

A view still shared by many business managers is that ethical stances are costly and that ethics and economics do not go well together. This is particularly true with small companies and in developing countries. The argument usually refers to the forces of competition. If competitors do not follow suit in, say, reducing waste emissions and investing in pollution abatement equipment, then those firms who do will be outcompeted on the market place. Thus, eventually, only the cost-minimising more polluting firms will survive, even if ethical considerations were present initially. (Of course, we are considering decisions over and beyond the minimal legal requirements.)

---

[27] Arrow (1973), "Social responsibility and economic efficiency".

[28] McIntosh et al. (1998), "Corporate citizenship: successful strategies for responsible companies". Dallmeyer et al. (1998), "Environmental ethics and the global marketplace".

As again the example of Nissan USA demonstrates, and many others like it, the above argument may hold only if a number of conditions are held constant; that is, provided that consumer demand for the firm's products and their substitutes does not change, that new technologies do not allow reduced pollution at lower costs, that customers, government and other stakeholders do not care about the firm's environmental management, that technology, choice of products and internal organisation are not linked in any way, to name but the more obvious. When any or several of these factors are made to change, the competition argument usually falls, because it is basically a static argument, while the rule of the game in a dynamic world is to change the rules! As Michael Porter, of Harvard Business School, has put it: "The conflict between environmental protection and economic competitiveness is a false dichotomy. It stems from a narrow view of the sources of prosperity, and a static view of competition."

Evidence provided by a number of sources[30] shows that many firms have been able to improve their environmental performance while increasing their economic performance, be it increased profits, increased market shares, growth in size, or several of these. The case of Industrial Products Inc. is enlightening[31]. However, it is also true that economic and environmental performances do not necessarily go together. So, what are the ingredients for a successful joint outcome?

There is no magical formula, of course, but several features do seem to stand out from successful businesses: the long term view, initiating a new relationship with business partners, adjusting the business in a structural way, by simultaneously changing technological, market and organisational elements, educational investments of both management and the workforce, a change in mentalities so that new behavioural patterns become internalised and routine[32]. This last aspect is brought about both by education and by a system of incentives within the corporation. In all cases, it seems, strong leadership by top management appears a necessary ingredient. Sometimes it is the impact of one strong personality.

Strong leadership and commitment from the CEO and top management are currently being seen as a critical ingredient for success[33]. Why should this be so? A technical answer will be provided in the following section. But there is also the question of the ethical origin of such a need. Is it utilitarian or

---

[29] Of course, these goals may themselves change as a response to a change of context - the prohibition of some activity or product previously allowed, a technological breakthrough, a change in political regime...

[30] See e.g. D.K. Denton (1994), "Enviro-management: how smart companies turn environmental costs into profits"; Koechlin & Mueller (1992), "Green business opportunities: the profit potential"; McInerney & White (1995), "The Total Quality Corporation: How 10 major companies added to profits and cleaned up the environment".

[31] "Industrial Products, Inc: Measuring Environmental Performance", Richard Wells, ABT Associates. MEB Publications, World Resources Institute, 1995.

[32] R. Welford (1998), "Corporate Environmental Management. Vol. 1: Systems and Strategies. Vol. 2: Cultures and Organisations."

[33] See T. Dell (1995), "Corporate environmental leader: five steps to a new ethic", and H. Einsmann (1992), "The environment: an entrepreneurial approach". Also module 1 of A. Sturm (1998), "ISO14001: Implementing an environmental management system", Ellipson, Switzerland.

duty-based? Actually, the question seems to reflect a third kind of ethics, virtue ethics[34]. Virtues were first presented as constituting a consistent ethical system by Aristotle in the 4th century BC. In modern times this view of ethics was discarded and has only recently regained attention. In our context, it refers to personal qualities of excellence and example. Virtue ethicists see in personal behaviour the source of ethical values in that they create in other people the desire to imitate the virtuous, or at least an admiration for their behaviour. In ancient times such values were courage, self-sacrifice and loyalty to one's king and religion. In today's business world, such values are integrity, honesty, trustworthiness, sense of responsibility, accountability, genuine commitment, and so forth. This view of ethics may have something to offer in situations of moral dilemmas. This is when top executives face conflicting 'external' moral demands, like having to choose between the closing down of an operation for environmental purposes and maintaining jobs. It may happen that existing moral standards, precisely because they lead to such conflicts, are of no help to decision-makers[35]. They must then rely on some inner sense of what is the "right thing to do in these circumstances", in a very context-specific way, and implement their decision in total agreement with their perception and feelings. Virtue is then the capacity to solve ethical dilemmas in such a way that, appealing to others, the solutions will acquire the status of moral, that is, general values. Whilst utilitarianism and kantism are exogenous value-generating processes, virtues generate values from within specific individuals when faced with moral dilemmas with serious social consequences. Of course, managers may need to learn 'moral skills'[36]. The logic of virtue ethics is controversial, but one can intuitively see the point. CEOs and top mangers need to have enough of this inner 'moral strength' if they are to succeed in harmonising economics and ethics for improved environmental performances.

To summarise, it is not true, as many still believe, that ethics and economics are mutually exclusive. A firm can live up to its ethical commitments and improve its economic and financial performance. Indeed, more often than not, it is *because of* its ethical commitments, rather than *in spite of* them, that such improvements can be achieved[37]. At the same time, however, such happy results are not automatic, and need careful thinking and planning, a change of mind-set and corporate culture, a restructuring of activities, and a redefinition of relationships with business partners and other stakeholders, none of which is easy to achieve. There is yet another point: supposing the will and

---

[34] See Baron, Pettit & Slote (1997), "Three methods of ethics", where the authors present and compare the relative merits of consequentialism (of which utilitarianism is a special case), deontologism (of which kantism or duty-based ethics is a special case), and virtue ethics.

[35] See the discussion of moral dilemmas and their meaning and possible sources by H.E. Mason (1996), "Moral dilemmas and moral theory".

[36] E. Schein (1966) had already seen the value of this in "The problems of moral education for the business manager". See also R. Solomon (1992), "Ethics and excellence. Cooperation and integrity in business", and D. Murray (1997), "Ethics in organizations. Values, codes, vision, strategies, action."

[37] We say "because of", but not "thanks to", which would be wrong. As will be made clear later, the "because of" refers to the many side-benefits a firm can reap from its efforts in trying to live up to a challenging set of ethical commitments, notably with respect to environment and indirect stakeholders. See e.g. P. Pearson (1992), "Using environmental management systems to improve profits".

motivation is there, and both top management and the rest of the firm are committed to improve environmental performance, the question remains: can they afford it? Surely, small enterprises cannot face up to the challenge in the same way as big business? What if the market is very competitive or in decline? What if the costs of acquired equipment are sunk and not recoverable, making a technological rehaul a financially unrealistic prospect? What if the firm is deep into debt? To say that poor environmental performance can only make things worse will not help. The question is, how can it escape the financial trap?

It is worth realising here how fast the institutional, the legal and the economic context of the firm is changing. Only ten years ago, the answer to the above questions would have been that small enterprises, or those in difficulty, are unlikely to set themselves ethical commitments and adopt environmental performance standards without strong economic incentives. In the last ten years, many new financial, insurance and investment institutions, not to mention profound legal changes, have appeared on the market that modify the context within which firms must make their decisions. The ISO 14001 norms may also be extended to small and medium enterprises (SMEs) as a new ISO 14002 series. The novelty is that the new context is making it increasingly economic for firms to live up to ethical commitments. The tensions between economics and ethics are being absorbed by social evolution, in turn making it easier for business to carry the flame further. This warrants a closer look at the way ethics and economics may relate to each other.

The ethics of economics and the economics of ethics

Investigating the ethics of economic activity, as well as of economic principles, is a classical theme, and has been looked into since the inception of economics as a distinct field of thought. People sometimes forget about Adam Smith's other great work, *The Theory of Moral Sentiments*, which, to him, could not be dissociated from the better known *Inquiry into the Wealth of Nations*. John Stuart Mill and Stanley Jevons, also key contributors to modern economic thinking, were sharply aware of the moral dimensions of economics. Marx was morally critical of the very foundations of economics in the Western world. Was maximising profits morally acceptable? Was the search of economic efficiency at the expense of social equity morally acceptable? The more recent environmental outcry is in this perspective but the latest manifestation of a 200 year old trend[38]. Is it morally acceptable to place economic values on natural assets, to figure out whether it is profitable or not to preserve an ecosystem, or worse, to compute under what conditions it is economic to drive a species to extinction, even if the purpose is to avoid creating those conditions? This line of enquiry may be called the ethics of economics[39]. From the firm's

[38] One may also recall that in the Middle Ages, in Europe, earning interest from lending money was considered immoral and banned by the Church, an activity left mainly to the Jewish diaspora. That this created scarcity in capital and drove interest rates up to usury levels was not seen as a problem.

[39] A recent book by J. Broome (1999) looks at "Ethics out of economics", that is, what ethical principles can be generated through the efficient workings of an economic system?

perspective, it is an "internal" issue insofar as its members question the morality of its doings and, in particular, of its management of the environment, or lack thereof. It is an "external" issue insofar as government questions the morality of the firm's doings and decides whether or not it will sanction unethical behaviour.

The fact that firms try to anticipate government's, or society's, appraisal of their activity internalises to a degree their own sense of morality, but at the same time blurs the ethical nature of their motivations. Typically, a firm will wish to avoid sanctions and will adapt its strategies accordingly. Mining firms, for example, will do a better job in mine-site rehabilitation than legally required to make sure that in the future, should rehabilitation standards become stricter, they are not held liable to costly ex-post improvements. However, such is not always the case if firms are powerful enough to set the standards and manipulate governmental regulations. This has often happened in developing countries that must deal with powerful multinational firms. In the past, there were no incentives for big firms to act ethically rather than profit from their local power, especially in the case of collusion with corrupt governments. Shell's environmental record regarding its oilfields in Nigeria is a complex mix of bad management, lack of ethical commitment, and collusion with a corrupt government, itself lacking morality. However, Shell's recent about-turn in its ethical commitments and in particular its environmental performance standards, as witnessed on its web site and by its recruitment of environmental management personnel, shows that the company, like many others, is evolving[40]. What is the source of this evolution?

The answer may be analysed in terms of "ethical incentives" and inaugurate a new line of inquiry: the economics of ethics. Shell and many other companies are making increasingly transparent commitments in terms of not only environmental performance, but also in terms of general business integrity, fair competition, health and safety standards, community involvement and communication[41]. Why? As stated earlier, the evolution of companies may be seen as a response to changes in wider social expectations. Shell companies are concerned with consumers' reactions and possible political or economic action at home and wherever they have big stakes. They are concerned with their image and reputation that will impact on their market share of all direct and indirect products. Because of the increasing social demand in information (through professional media channels and the Internet), the lack of clear and reliable reporting and auditing of the firm's activities and achievements will increasingly receive a negative interpretation, and damage the firm's interests. As a result, it appears that it is in the firm's best interests to take on some of society's broader interests and, in particular, anticipated environmental management standards. In short, changes in social expectations and institutional context are internalising

[40] Van Engelhoven (1991), in “Corporate environmental policy in Shell”, provides a longer term perspective.

[41] "People, planet and profits: an act of commitment". The Shell Report 1999. An increasingly large number of firms are publishing similar reports. However, some reports are better than others (cf. Chap. 3).

the firm's ethical concerns, merging the "internal" and "external" aspects of business ethics. Quite a revolution in the history of corporate management.

From the regulator's point of view, the question becomes: what changes must be brought about for firms to internalise the social ethics of the time, for instance best-practice environmental management? This is perhaps the key question in the economics of ethical behaviour. The answer comes mainly in terms of institutional change and the restructuring of business incentives. Thus, implementing a tax on CO_2 emissions is making firms reassess their energy systems throughout, both at the production and at the consumption end. Special rewards with large media coverage can be offered nationally or internationally to increase the virtues of top managers. In addition, the social processes by which such restructuring of incentives is achieved is becoming instrumental. In Western Australia, the Department of Environmental Protection has actively involved the business community of the Kwinana Industrial Region, south of Perth, in the making of new environmental-oriented incentive mechanisms, with the aim to promote self-efficient regulation of pollution emissions. Negotiations have produced an "à la carte" menu where firms, depending on their size and finance, can choose anywhere between strict external monitoring and complete self-regulation, with government passing on the costs of monitoring and control to companies.

The New Environmental Business Ethics involves bridging the gap between economics and ethics through the "economics of ethics", provided that government and the rest of society is willing to do so. Thus the reduction in tension between economic and ethical imperatives for business can be reduced by appropriate public decision-making. This involves changes in legislation, in statutes, in taxation, and in rewarding and sanctioning systems. For instance, this last means can be made to internalise the effects for the firm so as to allow it to capitalise on any derived benefits. Such is the purpose of environmental excellence awards that have, for example, strongly motivated Alcoa of Australia in its recent rehaul of its environmental management system. Likewise, in Indonesia, governmental rewards using "colour tags" to represent companies' environmental achievements have actually "coloured" each firm and allowed the greener ones to capitalise the benefits in terms of image building, reputation and competitive edge.

The merging of ethics and economics, once anathema, is being conceptualised by a growing number of game theorists who study strategic interactions between firms, governments, consumers and other stakeholders[42]. The goal is to find institutional mechanisms that reduce, and sometimes do away with, the tensions between a firm's economic and ethical imperatives. As seen above, this process seems to be well under way and constitutes, in our view, a historical breakthrough, the merits of which, we believe, will one day appear attributable to the environmental concerns of our times.

One last point need be made on this issue. If the internalisation of ethical standards, as held by the wider national or international community, both increasingly interconnected, is to be actively

[42] See e.g. Harsanyi (1992), “Game and decision theoretic models in ethics”.

implemented by business firms, they need to have enough manoeuvring space to do so. In other words, freedom of choice appears to be an essential ingredient for a successful implementation. There are several reasons for this. One is that firms have the best information regarding the implementation of decisions and can therefore minimise the "ethical costs", thus raising the chances of actual implementation. Another is that freedom of choice widens the spectrum of available options, which fosters creativeness and innovations, which further widens available options [43]. A third is that, too constrained in its decision-making, a firm will divert its creative potential to countering regulatory constraints, an obviously counter-productive activity[44]. One may ask whether many of the environmental disasters in the former Soviet Union are not attributable to the reduced decision-making latitude that was left to industrial managers, coupled with a lack of any appropriate incentive system.

Framework for ethical-economic analysis: ethical incentives

Social vs. philosophical morality

The two key questions underlying the following analysis are:

1) What can influence (and increase) the morality of economic behaviour?
2) How can the morality of economic behaviour be influenced (and increased)?

Before going further, we must define what we mean by 'morality'. I shall short-circuit the huge literature on the subject, purposefully, by distinguishing two sorts of definitions: a philosophical one and a social one. The first refers to a philosopher's voice, as described above. The second refers to some specific social process expressing the public's voice (what more commonly is termed public preferences in the economic literature). In accordance with the different procedures used in the two cases (rational reasoning in one and a mix of factors in the other), the definition of 'morality' will also differ. I see the difference as follows.

The social definition of morality is relativistic and extrinsic, whereas the philosophical definition is intrinsic and universalistic. Actions or decisions are socially moral if they are defined as moral by a given society through accepted social voice processes (e.g. voting). Actions or decisions are philosophically moral if a socially accepted philosophy, or philosopher, defines them as such using internally consistent and universally generalisable arguments.

[43] A. Sen, the recent Nobel laureate in economics, has provided throughout his work a theory of capabilities connecting freedom of choice and social equity. See "Inequality reconsidered" (1992).

[44] This is one of the drawbacks of command and control (regulatory) policies that, because of this, may face high enforcement costs. Economists are advocating a greater use of incentives-based policies.

Given this distinction, I define social morality as a distance[45] between private and social net benefits from private decision-making. Symbolically,

$$M_S = ||B_S - B_P||$$

Benefits are defined broadly and include non-financial rewards. The larger the positive distance of private over social benefits, the less socially moral are the private decisions. As will be seen in the next section, 'hypermorality' (not necessarily a desirable attribute) is defined when social benefits come at a net cost to private benefits.

In contrast, I define philosophical morality as the distance between a vector of values and value-levels held by a philosopher (or widely accepted moral philosophy or ethics) and that held by that portion of society under consideration. Symbolically,

$$M_\Phi = ||V_\Phi - V_S||$$

Usually, the philosopher will be more demanding in consistency and continuity than current social acceptance, though this is not always the case (e.g. Nietzsche).

I now emphasise the fact that I shall only deal with social morality as defined above. I have nothing to say here on philosophical morality. My 'voice' is that of a social scientist and economist, not that of a philosopher.

Before tackling the two key questions asked above, one must first specify what morality means and it means to "moralise economic activity". To this question I now turn. I consider a unifying framework for the ethical - economic relationships, from the point of view of the economics of ethical behaviour as much as that of the ethics of economic behaviour.

Relativity of private vs. social domains, and of selfishness vs. altruism

In the context of social morality, the first clarification needed is between private and social domains. Obviously, property rights and entitlements are involved. But analytically it must be noted that the opposition is a relativistic one. As shown in figure 1, the private domain can range from the sole individual as the minimal unit to the family, the business firm, and, in international affairs, to the nation-state. The private-social opposition is an "us-them" opposition. Within the business sphere, 'us' may mean a particular company and 'them' all the other companies of an industrial (consolidated) group of companies; or a specific plant as opposed to the firm as a legal entity. The boundary that makes the division also differentiates selfishness from altruism, both of which therefore have a relativistic meaning. This point has too often been overlooked.

[45] The term 'distance' is chosen for want of a better one, but, as will appear shortly, the concept is two-dimensional, not one-dimensional. Note that this definition remains incomplete, in that the metric over which this distance is defined is not specified (there are many possible metrics). This is left for future work.

Ethical-economic space

The second step is to be able to relate ethical and economic aspects in one same representation. This is offered in figure 2. The horizontal axis (B_p) figures the net private benefits expected from, or resulting from, a private decision. The positive semi-axis measures self-gratification, under whatever form. The negative semi-axis reflects private sacrifices. The vertical axis (B_s) figures the net social benefits resulting from the private decision. The negative semi-axis reflects the generation of social ills.

The graph in figure 2 may be read in two different ways, depending on the meaning given to the vertical axis. B_s can represent the ex-ante, or expected, social consequences of a private decision, or it can represent the ex-post, possibly unexpected, consequences. In the first (ex-ante) case, a further distinction accounts for freedom of choice. Either the decision maker (DM) can choose to include social benefits to her own private benefits (free choice case), or, by choosing her level of private benefits, she cannot avoid extending the resulting benefits (or costs) to 'others'. The second (ex-post) case is ethically equivalent to the ex-ante no-choice situation.

In the ex-ante, free choice case, the positive semi-axis represents some form of altruism and social good-doing. (We shall see below why the concept of 'altruism' can be so ambiguous). The negative semi-axis represents anti-social or malevolent behaviour. In the other situations, the vertical axis can be interpreted as representing social externalities, both positive and negative. This is not to say that they are devoid of ethical meaning. A polluter can, at a certain cost, decide to abstain from the polluting activity, or she may not. It is largely an ethical decision.

The two axes define four quadrants. The first (top right) is the locus of 'normal' ethical-economic behaviour. The reason for its 'normality' will appear shortly. The boundary behaviours, confined to the two positive semi-axes, describe, on the private benefit axis, 'amoral' or purely economic behaviour, the subject of standard microeconomics. On the social benefit axis, in the ex-ante free choice case, we have a form of pure altruism (with no consideration for private benefits). The ex-post and no-choice cases for zero private benefits are meaningless. The off-boundary first quadrant loci describe varying degrees of moral behaviour, but in ways to be further described hereafter.

The second (top left) quadrant describes what may be called 'hypermoral' behaviour, where social good is sought, or accepted, while suffering private (net) costs. The third (bottom right) quadrant describes 'immoral' behaviour where private benefits are sought, or accepted, at the cost of negative social benefits. Finally, the last (bottom left) quadrant is outside the field of both ethics and economics. Since it describes behaviour leading to both private and social ills, it is best considered as pathological and left to (social) psychologists. We shall not be concerned with it.

Morality of economic behaviour

In ethical-economic space (figure 2), the morality of an activity or decision is not to be understood as a (scalar) point, but as a two-dimensional vector in affine[46] relation to the origin 0. That is, it is defined by a displacement, not by a position. Both the magnitude and direction of the movement contribute in defining (the level of) morality. As will appear more clearly below, not only the ratio of movement along the vertical axis to that along the horizontal axis is important, but also the absolute magnitudes. Moralisation, defined as an increase in morality, will appear as a vector transformation, a change in direction and/or an affine change relative to the origin.

Figure 3 represents three 'limit' cases. The line A^+, above and parallel to the B_p axis, represents a fixed commitment to social good, independent of the magnitude of private benefits, provided that these exceed a minimum value B_p^0. This is the case of some regular voluntary social work or annual donations. The A^- line, below and parallel to the B_p axis, represents a positional rent where, because of social status or otherwise, a fixed amount of benefits is privately extracted from society. Politicians are not immune to this temptation. The horizontal axis itself (A^0) represents pure microeconomic behaviour, without externalities.

Figure 4 represents non-limit situations. Sectors A, B, C,… represent the various relevant half-quadrants. The lines radiating from the origin represent the ethical-economic function. It is shown as linear for simplicity. We shall not investigate second-order characteristics (non-linearities) here. The most 'normal' half-quadrant is A, defined as the set of all radial functions whose angle θ is such that $0 \leq \theta < 45°$. Note that tangent(θ) measures the ratio of social to private benefits. In sector A, the ratio is less than 1. It is zero for pure microeconomic 'amoral' behaviour ($\theta = 0$ for decisions along the B_p axis). Any function in sector A reads as: the decision maker (DM) is willing to increase social benefits provided that private benefits increase at a faster rate. This shows that the label of 'morality' as well as that of 'altruism' are too simplistic to account for this possibility, mainly because they are static concepts and do not account for changes. A DM behaving in sector A would better be called a 'social benefactor', without any moral connotations.

Sector B behaviour corresponds to angles θ greater than 45° but smaller than 90°. The ratio of social benefits to private benefits is greater than 1. Here the distinction between the ex-ante free choice case and the other two situations must be made. If the DM is freely chooses ex-ante to behave in the B sector, wilfully expecting higher social benefits than (net) private gains, then some genuine morality may be implied. This is because the incentive is there to try to divert and capture part of those social benefits.

[46] By affine is meant that the position relative to lines passing through the origin is meaningful (as is the case through space shifts or translations). Intercepts of the line defined by the vector with both horizontal and vertical axes are meaningful.

If the DM does not do so, it must necessarily be on ethical grounds. In the ex-post and no-choice cases, the moral content in decision making is less obvious, as then one simply observes large (positive) externalities. However, the moral content is not zero, because of the possibility for the DM to demand payment for the externalities she generates. Again freedom of choice is a crucial factor. If there are institutional possibilities for such payments (e.g. ozone-preserving activities and most international externalities), and the DM does not activate them, then it must be on ethical grounds. Otherwise, her morality is unobservable (she may have demanded payment if possible, or she may not have). Note that it is costly for the DM to demand payment for the externalities she generates. These are transaction costs and must be subtracted along the horizontal axis, although they society may also have to support part of them (indirectly through the legal and administrative infrastructure).

Sector C covers negative angles ($\theta < 0$). In this case increased private benefits are correlative with increased social ills and costs (in net terms). If it represents ex-ante free choice decisions, then we have anti-social behaviour, usually sanctioned by society through the penal system. Examples are drug dealing and Mafia type activities. The goods involved are often 'demerit goods'. In the case of ex-post or no-choice decisions, we have negative externalities, with pollution as a typical example. Again, the morality of behaviour depends on the institutional obligations to compensate second and third parties for the damage generated. There is moral behaviour if there is no compulsory compensation requirement and the DM compensates all the same. Alternatively, she quits the damaging activity and turns (at a cost) to some other one.

Sector D is in the 'hypermoral' quadrant and represents decisions increasing social benefits while reducing private benefits. Note that in this quadrant the motivating force can only be upwards, whereas in the other two quadrants they can either be upwards or rightwards. This is an extreme form of altruism. To make sense of it one needs a utility function weighting the private and social benefits in such a way that the gain in social benefits is of more value to the DM than the loss in private benefits. Throughout this analysis, we have not touched on such weights, although they are implicitly measured by tangent(θ) in the ex-ante free choice situations. This picture is unlikely to materialise in the short run, but might do so over the long run. The following remark is important.

This analytical framework is purely static. Time does not appear explicitly. Short run analysis is implicitly implied. The effect of time on the moral content of economic decisions is left for later work.

Moralisation

Figures 5 and 6 demonstrate what "to moralise an economic activity' may mean. Figure 5 may be read as pure statics or comparative statics. In pure statics, the T^+ line, assumed parallel to the one in sector A, figure 4 (noted T^0), states that social benefits are sought, or accepted, even when private benefits are

currently negative. If the B_p-negative part is truncated, then decisions are accepted to contribute to social benefits only above a minimum value. The T^- line, a more realistic case, states that private benefits need to be above a certain threshold before social benefits can be expected. Note that truncation of the negative B_S part must have moral content, since the opportunity for positive net private benefits is forgone.

In a comparative static sense, figure 5 pictures shifts (or translations) in ethical-economic functions, a first reading of what "moralisation' may mean. The upward shift from T^0 to T^+ represents a first form of moralisation, where the relative values of social and private benefits are not changed, but where the DM is made to accept higher social benefits without an increase in her private benefits. Left of the vertical axis, the shift means the DM becomes willing to generate social benefits even when incurring, at least initially, private losses. A rightward shift (remember, no downward or leftward shifts are economically meaningful) is a form of 'demoralisation' (reduction in morality) where the DM wants a higher level of private benefits for generating a given level of social benefits. Of course this includes the possibility of compensatory payments.

Figure 6 represents a different form of moralisation. Here the angle of the ethical-economic function changes, or is made to change. This means the relative rates at which social and private benefits are generated change. In the ex-ante free choice case, the relative weights, or values, between them changes. This is (if θ increases) a true instance of moralisation. In the ex-post or no choice cases, we most likely have a technological or organisational change. If θ increases to $\theta' = \theta + \alpha$, then every unit of private benefit generates an increased amount of social benefits (by $tg\ \theta' - tg\ \theta$).

Combinations of shifts and rotations yield mixed moralisation changes or policies. We may keep in mind that shift-moralisation policies (or processes) and rotational moralisation policies (or processes) are unlikely to be the same. The purpose of this rather lengthy discussion was to highlight a framework within which moralisation policies and processes may be modelled in the future[47].

We now turn to how self-moralising processes are increasingly competing with moralisation policies and how the role of government with respect to the moralisation of economic activities may be made to change. Namely, its role will increasingly be to facilitate autonomous processes through appropriate institutional building.

4. From moralisation policies to induced self-moralising processes

Compliance or proactive initiatives ?

[47] R. Mirman, in "Group Theoretical Foundations of Quantum Mechanics" (1995), provides an interesting discussion of the role of a theoretical framework for modelling purposes.

"What is ethical in business?" We may quote Henderson's (1992) book title to further ask: how far do you need to go to be 'ethical'? Is compliance with the law and existing regulations enough? Or must the firm be proactive and precede laws and regulations? Henderson distinguishes between what he calls microethics, obeying the standards, and macroethics, changing the standards. The distinction makes sense when the established laws and regulations are seen to be unethical. "As long as it's legal, even if it's not ethical" has been a much cited attitude in certain business sectors. Often, this possibility arises as a result of geographical and cultural discrepancies or of some heritage from the past. Waste management laws and regulations have been much stricter, and their enforcement more adamant, in the more industrialised countries than elsewhere. It is thus perfectly legal for a firm to relocate very wasteful activities from one country to another, but such behaviour is increasingly attracting widespread criticism on ethical grounds. Likewise, laws and regulations take time to adjust to new technological and social circumstances, so that there is always some lag between the need for new regulation and its supply by public authorities[48]. Firms can legally profit from this time lag, even if doing so is unethical by current standards.

But perhaps the best way to ask the question is to ask it in reverse: when is a firm's behaviour unethical, and what if it is? In section 2 above, we saw there are several ways of considering this question. Philosophers tend to search for universal rules to define what is and what is not ethical, relying on reason and logic. Anthropologists and sociologists, by contrast, tend to view ethics in a relativistic way, and examine what is ethical within a particular culture. In section 3 we suggested yet another angle, that of the economics of ethics. Each view seems to serve a specific purpose. Philosophers tell society what it should value. Anthropologists and sociologists tell society what it values and explain the social consequences of having a specific value system. Economists are more interested in telling business corporations, consumers, and governments what the economic effects of a given behaviour will be. Usually, a firm's behaviour will be seen as unethical if a majority of stakeholders judge it so, and the effects will materialise in the form of governmental pressure, administrative hassle, increased taxation, reduced rights, consumer reactions, loss of market share, and lawsuits, all of which may end up costing the firm millions. The spread of electronic communication systems, in particular the Internet, is changing the speed and intensity of public reaction to corporate behaviour. Times have changed. No firm, no large firm at least, can ignore this new game. Like it or not, it must play it, and play it to its advantage. Many firms have begun doing so.

The choice between simple compliance and proactive initiative in the sphere of corporate environmental management also links, in subtle ways, ethics, attitude to risk and time horizons. Put simply, the more ethical the firm's attitude, the longer the time horizon. This is because an increased time horizon also means a broader scope of concern, since the further one looks into the future, the more

[48] An insightful analysis of the impact of lags between demand and supply of regulations and laws is given by D. North (1990), "Institutions, institutional change and economic performance".

private and social impacts tend to mix and interact with each other. Unethical attitudes typically do not care about tomorrow, and heavily discount the future. This is also because feedback effects take time. A firm that dumps its waste in a landfill and thinks no further of it may find itself one day held liable for leaching of toxic substances into the groundwater aquifer; but this may take several years to happen. In reverse, the longer the time horizon in a firm's planning strategy, the more likely it is to adopt an ethical attitude, typically by internalising the future costs of its environmental impacts. This will create the economic incentive to prevent such impacts by proactive investments, even if they are not presently required by law.

Future impacts are never 100 per cent sure and are always subject to some uncertainty. There are subtle links between an ethical attitude and attitude towards risk. An environmentally unethical attitude will discount external, social or environmental risks while overemphasising internal financial risks. Thus, a firm which has committed itself to high environmental standards will tend to adopt the precautionary principle and abstain from projects that may lead to likely irreversible damage to the environment. Firms without such a commitment will emphasise the uncertainty of the irreversibility and oppose the higher certainty of the economic benefits of an industrial project. Economists take attitude to risk as a given parameter, but this parameter is heavily influenced by the underlying ethics of the decision maker.

Having clarified the links between ethics, attitudes to risk and time horizons (as well as time preference)[49], one may now ask: are environmental investments ethical investments?

Self-moralising forces through social and market interactions

An oil tanker that flushes its engines into the sea close to a coast will undoubtedly attract widespread criticism amongst most stakeholders, not just from coast-dwellers. A paper producing industry killing all life in the river and nearby estuary will likewise attract widespread criticism. In contrast, a firm reinvesting a portion of its profits in tree plantations, advanced mine-site rehabilitation, and environmental clean-up activities, will attract widespread praise and approval. If there is a large consensus amongst stakeholders, then a decision is likely to appear clearly unethical or clearly ethical. The above examples suggest that a clearly unethical decision is characterised by the availability of affordable, though costly, alternatives that could have been chosen but were not for the sake of a quick buck. When it was known that Beech Nut Nutrition Corporation had decided to go ahead with selling bogus apple juice to infants, the outcry was unanimous. In the hope of increasing shareholders' satisfaction, the top managers had compromised themselves, and the firm's image with them. By contrast, when AES Corporation unilaterally decided, in the United Kingdom, to offset the carbon dioxide

[49] There is yet another aspect closely linked to these three: attitude towards fairness. Its translation into "inequity aversion" is an analog to risk aversion and "aversion for waiting" (the opposite of time preference). The exact nature of the relationships between all these is as yet unclear and subject for future research. The discounting of intergenerational benefits from environmental investments is certainly a critical issue in this respect.

emissions from a new coal-fired plant by investing in reforestation projects, there was unanimous praise, and the company was hailed as an ethical company worth emulating[50]. The tough job is when there is limited consensus amongst stakeholders, and when therefore actions appear ambiguously ethical or unethical[51].

Such cases typically involve ethical dilemmas, where two or more value systems come into conflict. The example of the Alberta mining community is illustrative. Employment is pitted against environmental preservation, and involves the redistribution of costs and benefits between different stakeholders. Similar examples are found all over the world with communities specialised in fishing, forestry, and mining, or deeply involved with heavily polluting industries. As several authors have pointed out, the last thing the firm's management wants is to get caught in ethical dilemmas. The goal is to avoid them altogether[52]. This usually entails a process involving negotiations with and between all stakeholders, and where the goal is to reframe the issue in a more constructive way. This often means institutional innovation.

Lack of consensus as to what is and what is not ethical should not, however, be considered pathological or abnormal. Henderson (1984) makes a strong point in highlighting what he terms "a spectrum of ethicality". According to him, it should be expected, in a free, democratic and multicultural society, that a wide range of values prevail, and therefore that views differ as to whether a specific policy is ethical or not. The firm must learn to operate with such a spectrum, while the weight of consumer pressure and public opinion increases world-wide. To do so, it must provide a clear statement of its core values that will attract widespread consensus, a point also stressed by Henderson (1992), and then do its best to live up to them, as many firms are now doing. Some see only propaganda in such statements and related documents and web sites. Although the firm certainly tries to turn such efforts to its advantage, and elements of propaganda are evident, it also commits itself in a way that is not unlike a process of certification. The game is to build oneself a reputation based on credibility, that can then be harnessed to all other branches of the firm's activities. If the firm fails to live up to its own standards and commitments without providing convincing attenuating circumstances or *raisons de force majeure*, it will lose all its built-up credibility and the cost of rebuilding it will be much higher than previously. The top management of Johnson & Johnson, in the USA, realised the huge costs needed to rehabilitate the name of one of its pharmaceutical products, Tylenol, a stock of which had been poisoned by a criminal hand, but decided to withdraw all stocks from sale and destroy them (Velasquez, 1997). Similarly, Perrier, though not after internal strife, finally decided to undergo the costs of withdrawing all its mineral water bottles from the

[50] See M. Velasquez (1997), “Business ethics. Concepts and cases”, who provides many other examples.
[51] By contrast to the (implicit) approach adopted here, which is to investigate *social* procedures for resolving such ambiguities, ethics endeavours to solve them philosohically, using rational reasoning.
[52] This point is convincingly argued by V.E. Henderson (1992), “What’s ethical in business”?

market, so as to rebuild consumers' confidence. Reputation, credibility and confidence come at a cost, and if the firm fails to honour them only once, this cost must be considered as sunk and lost forever[53].

In ambiguous situations involving ethical dilemmas, the ethical firm invests the needed effort to resolve the ambiguities and obtain a consensus as to what is the right line of action.

Self-moralising processes internal to the organisation

Today, most business corporations are complex structures with many nested decision-making systems. It is unlikely that, from top to bottom of the hierarchy, and across all branches, the firm's ethical values will be implemented equally, or in a similar fashion. The vision of how an organisation functions, and should function, will impact strongly on value implementation. In particular, the specific positioning between the extremes of taylorist-like vertical command and control and TQC-like horizontal share of responsibilities. The matrix describing who initiates what and who implements what will have a critical impact. If an environmental ethic based on a specific statement of social responsibilities is implemented from the top, a point highlighted as desirable in the current literature, how is the rest of the organisation to follow suit, or even do more than pay lip service to it? How is the worker at the base to feel concerned and internalise the new set of values?

An individual's position within an organisation, whether public or private, big or small, will influence her time frame and attitude towards risk, and therefore, as seen earlier, her capacity to act ethically, that is, be concerned with others' interests and those of the organisation at large. The incentive system will be critical. Is the individual's position stable? Do her rewards focus on initiative or implementation and if both, what are the relative weightings? Is personal achievement emphasised or the impact of the individual's work on others' achievements, and that of the firm as a whole? Again, what are the (possibly implicit) weightings? For all these aspects, are the criteria and weightings clearly formulated and part of a transparent corporate policy, or are they only implicit and must be induced by employees, ex-post, from past decisions? In addition, has top management provided clear clues and guidelines on how employees, at various levels of the organisation, can implement the firm's values in their specific field, while encouraging initiative and innovation at all levels? How does this tie in with the communication structure within the form? Is it mainly top-down and vertical, or are multiple horizontal and bottom-up channels also available?

The concept of the "ethical entrepreneur" has been launched (Einsmann, 1992), and certainly a figure like Emil Hassan of Nissan USA is a typical example. Key characteristics of such figures are, first,

[53] Economic analysis shows that sunk costs are at the core of credible and thus efficient certification. Without important sunk costs no certified product or process will have the necessary credibility to give it any value. See for example Auriol, Lesourd & Schilizzi, 1998.

the value they place on clarity and certainty, that is, commitment, with respect to their own employees and other direct stakeholders. Ambiguous statements must be avoided, specifically values and principles that will appear ambiguous when viewed from lower levels of the hierarchy or from different branches of activity. That is to say the "implementability" must be worked into the phrasing of ethical principles from the very outset, if they are to have any impact. Ethical entrepreneurs seem to achieve changes in corporate behaviour because they focus on implementability. This steers them away from inapplicable or inoperative principles, for example those that will entail excessive re-organisation, sudden changes in routine, or simply excessive costs. The style of communication, internal reporting, coordination, spread of responsibilities, incentive system, are all instrumental in the implementability of the firm's environmental ethics.

5. Are environmental investments ethical investments?

One may first ask: what is the point of asking this question? If our argument has been clear enough, the answer should also be clear. If environmental investments are ethical investments, then profitability, especially short term profitability, cannot be the sole criterion by which they are to be judged. In terms of financially accountable costs, environmental investments can be unprofitable, at least in the short term, and still be desirable, even from the firm's point of view[54]. As is now well known, there are hidden costs and benefits that need to be accounted for. A few examples will clarify the point further.

There are many cases where firms have come to know of negative environmental impacts of their activities and have failed to address the issue, in the hope it would go unnoticed long enough. The expectation was usually that the time before the problem surfaced would be long enough for the benefits thus reaped to cover the costs of remediation or clean-up, once these were inescapable. The implicit calculation was that remediation, done too early, induced net costs and was not worth it. As it happens, such calculations have proved wrong[55]. This behaviour has helped change the legal setting and made regulations to evolve in a way that these firms have been judged at fault, and made to pay fines and compensation on top of remediation costs. However, perhaps the greatest costs in the longer run have been to the firm's reputation. The lesson here is that the decision, based on a cost-benefit calculus, changes the grounds on which these costs and benefits are evaluated, and defeats the original calculation.

We already mentioned proactive mine-site rehabilitation, over and beyond what is required by law. This is increasingly standard practice with big mining companies around the world. When asked why, the answer usually is: "to stay ahead of the game"[56]. This refers to future access to new resources,

[54] We are of course here primarily concerned with the firm's point of view, not the rest of society's.

[55] For obvious reasons, we avoid naming any specific firm here, but several cases are known widely enough. See e.g. R. Sparkes (1995), "The ethical investor".

[56] The author of the present paper toured the Pilbara mining region in north-western Australia and specifically investigated this point with several mining companies. The answers were all very similar.

licences to explore for new resources, trust from governmental authorities allowing them some degree of self-regulation, concern about future ISO 14000 norms and their impact on the market of their product, and, of course, good public image. The game means anticipating the future, adopt a long time horizon. This helps reveal otherwise hidden costs and benefits. Small mining companies are lagging behind. For example, in the Kalgoorlie mining district of Western Australia, small gold mining companies do not have a clean environmental reputation. The risk is that they will be prohibited from any mining activity at all, although such a prospect may actually exacerbate their profit-making efforts "while there's still time" - even if, in fact, profits of small companies are not conspicuous and many are losing money.

Other examples include investments in new, environmentally cleaner equipment, insuring against environmental risks, and directly ethical investments according to environmental criteria. Investments in new cleaner equipment are typically analysed by economists and business accountants in too static a way. The lesson from the deferred remediation cases carries forward here too. Such investments tend to appear least profitable, for a given taxation system, when made before others, because, being new, the market has not taken off yet and prices for the equipment are still high. However, once taken up by one firm and shown to be technically and economically affordable, regulators will have an incentive to change the existing pollution standards and reflect the new possibilities, and this will impose an external cost on firms that have not yet made the new investments. Although price of equipment may come down, the decision will be forced externally, and the timing may not be optimal for the firm, given the age of its existing equipment. With regard to insurance against environmental risks, the combination, described above, of ethical attitude, time horizon, and attitude towards risks will make insurance even against unlikely risks, because of potentially irreversible impacts, both ethical and, in a broad sense, economic. Again, doing so will change the economic environment in which the firm is operating, in a way that will help internalise the benefits and costs of its investment. Environmental insurance companies will develop, as indeed they have done in the 1990s, and a whole new array of financial and insurance instruments are developing to address these new needs. The particular case of ethical investment funds highlights how corporate behaviour and social expectations interact to produce new institutions that change the rules of the game and, in particular, the expected costs and benefits. Ethical investment funds, such as Ethos in Switzerland (see case study below), and ethically-based industrial indexes, like the Domini 400, contribute to internalise the benefits firms can reap from ethical decisions, and the costs they must suffer from unethical decisions, thus narrowing the gap between economics and ethics. This is a remarkable evolution not only in the world of business, but in society at large. 'Business as usual' will mean something different from what it meant in the past, that is, before the environmentally sensitive era.

6. Conclusion

The clearest and most exciting conclusion that seems to arise from the various points covered in this paper is this: the tensions between economics and ethics in the business world are weakening. In the future, it will increasingly be both or none. The evolution in social expectations with regard to corporate environmental management have brought about new mechanisms that tend to merge the economics of ethics and the ethics of economics. New interactions between business firms and their institutional environment, both national and international, provide incentives to look further ahead into the future, and also to broaden the scope of relevant risks. The result is worth meditating. In practice, it will be increasingly less costly for a firm to behave ethically, as it may be increasingly costly to behave unethically. This is because new institutional mechanisms, such as ethical investment funds and environmentally dependent financial products, are internalising the costs of unethical behaviour. As witnessed by the ethical statements made by an increasing number of corporations, and published on their web sites, a new business ethics is being born. By doing so, corporations are giving stakeholders a means of holding them accountable for their decisions, and of checking whether deeds match up to words.

At bottom, the problem of corporate environmental management is one of the provision of a public good by a private economic agent, because, in general, the environment has properties of a public good. The question then is, why would a private company voluntarily provide a public good? The traditional approach to this question, at least by government and policy makers, but also by environmentalists, has been in terms of 'command and control' regulation: laws, legislation, and corresponding sanctions for non-compliance. Economists are increasingly advocating incentive-based systems instead, where rather than constraining firms to conform to some externally defined demand, the firms' own energies are used to achieve the same purpose. Although still of external initiative, incentives rely on the firms' own inner objectives. A third approach goes even further and completely internalises the firms' behaviour by relying on its capacity to provide public goods with minimal external stimulus, typically with improved managerial competence obtained through ethical training and education. Government can foster such behaviour using education, moral suasion, persuasion, and other discourse-based influences. Economics essentially describes the possibility of an incentive-based provision of environmental services by firms. This paper has described such provision based on appropriate ethical values shared by firms. It has also shown how the distance between the two is a function of the institutional setting, both national and international, within which firms operate, and this distance has been shown to be decreasing with new institutional products. A key consequence of this process is the reduction in incentives for free-riding behaviour, a critical obstacle to voluntary provision of public goods.

From a theoretical point of view, neither pure utilitarianism nor pure duty-based ethics are sufficient for corporate environmental management. Rather, a combination of the two appears more likely

to be effective. It is interesting that, in the real world, this is reflected by social and institutional evolutions that lend weight to this conclusion. Increasingly, these changes materialise in new accounting, auditing and reporting systems, new certification procedures, new marketing strategies, new financial and insurance instruments, and new investment criteria.

Although business as usual will still be the game, business ethics will have changed. As was quoted in a New Millennium address, the new motto, replacing Milton Friedman's old one, is now likely to be: "The business of business is ethical business".

It is another ironic twist of history that the damage done to the environment by our industrialised economies will have played a major role in economic moralisation!

Appendix: Case Study
'Ethos': criteria and policy for ethical investments

'Ethos', Swiss Investment Foundation for Sustainable Development, is an investment fund based in Geneva, Switzerland. It was founded in February 1997 by two pre-existing pension funds, one representing the teachers and public servants of the canton of Geneva, and one representing the building, painting and plastering professions. From the outset, its purpose was defined to be the enhancement of sustainable development in business, that is, of companies demonstrating high financial, environmental and social standards. It achieves its goal by investing in firms that perform best according to its rigorous performance assessment system. Ethos will buy shares and apportion its investment capability according to a rating of companies that takes into account three aspects of sustainability: financial, environmental, and social. Ethos buys Swiss shares and European shares ex-Switzerland.

Although we are primarily interested in environmental criteria, it is also the case that the three aspects of sustainability of interest to Ethos are closely linked and reflect the common ethics of each company. Therefore, although we only detail the environmental aspects, we also provide an overview of the financial and social criteria used in Ethos' investment policy.

The first question is how Ethos combines the three sets of criteria to achieve a simple rating. One approach would have been to make use of some multicriteria method, where each aspect would be weighted according to a set of weights. Instead, Ethos uses a mixed lexicographic and weighting method which gives precedence to long term financial and economic performance. Firms are first screened according to this criterion, and then those that have passed this first test are screened again according to environmental and social management standards. These are then used to correct the financial rating either upwards or downwards, with the magnitude of the correction depending on that of the deviation of the company's standards above or below Ethos' own expectations. Thus, a firm performing environmentally and/or socially much below expected standards will find its financial performance down-graded more that a firm performing only slightly below expected standards. This holds of course for the reverse, where firms are performing above expected standards. In all three fields, performance evaluation includes the likely evolution of the firm for the foreseeable future, not just past and present performances.

Finally, a risk assessment is carried out that integrates all three fields: financial, environmental and social risks. This final assessment then determines Ethos' investment decisions.

For a firm to be financially and economically retained, it must meet four sets of criteria, all geared at assessing its long term potential:

1. Quality of management and strategy (includes management competence of managers and a clear strategy in a growing market)
2. Profitability and growth (market shares, return on investments, visibility of long term profits, operational cash-flows, geographical diversification)

3. Present-day potential (equity and debt, self-financing, price of growth, competitive position)
4. Risk control (consistency of portfolio management, evaluation of absolute and relative risk levels).

If the firm meets the expected financial standards, it must then meet the following environmental and social standards.

The social standards reflect a concern for all stakeholders, direct and indirect, as well as upholding values of human rights, democracy, social justice, and the particular needs of developing countries. They reflect relationships with:

1. Customers and suppliers, competition (Do products and services reflect real needs? Impact of products on human well-being. Respect for subcontractors and suppliers, continuity in the relationship, willingness to transfer technology, equitable treatment)
2. Collaborators and employees (working conditions, motivation and satisfaction of personnel, training, participation, attitude towards unions; active policy against gender and racial discrimination, employment enhancement policy)
3. Public authorities and local communities (respect for values of democracy, human rights, taxation; local participation and lobbying activities; respect for local legislation)
4. Shareholders and lenders (provision of adequate information, integration into banking and financial system).

In addition, Ethos has a policy that excludes firms whose turnover in the fields of armament, nuclear energy, tobacco and gambling exceeds 5%.

The environmental standards reflect :

1. Consistency and effectiveness of strategy and policy (principles and responsibilities, and quality of their implementation; information and publication of firm's environmental policy, standards and performance)
2. Quality and efficiency of management instruments; validity of targets with respect to local legislation and regulations
3. Production and inputs (quality of production process with respect to energy use, emissions, storage of materials, waste management, risk control; conformity of suppliers to firm's own environmental standards)
4. Products and use (environmental impact of product use and disposal; innovativeness of products; impacts of products on humans, animals and ecosystems; role of biotechnology).

Table 2.1 provides more detail and organises the criteria that have had an appreciable impact on the rating of companies by Ethos and its subsequent investment decisions. Note that many criteria could appear in several activity sectors as well as in different stages of activity. Empty cells only

mean that in the sample of firms analysed, no criteria were mentioned; it does not mean that there are none.

Ethos thus sets itself strict standards as to where it will invest and where it will not. The next question is, how successful is this investment policy? Data published by Ethos shows that for Swiss shares, it has performed equally as well as the standard SPI (Swiss Performance Index), while for European ex-Switzerland shares, a policy only initiated in 1998, results have at this stage (end 1999) been slightly below the other standard, the MSCI index. This is largely due to the long-term perspective adopted by Ethos, whose policy must therefore wait a few more years to be correctly evaluated. Given the constraints Ethos has imposed on itself, results so far seem satisfactory and rather promising.

Where does Ethos stand with respect to the values it upholds and the general field of environmental ethics in business? It is here that, as noted earlier, all three criteria, financial, social and environmental, are closely linked[57]. The first point is the time frame: companies have to appear sustainable in the long run. One may ask where financial sustainability comes into the picture. The answer is an interesting one. Without financial muscle, companies will not be able to care for the environment, nor for people[58]. The alternative is for somebody else to pay, as was the case in Holland with Avebe Chemicals[59], who was bailed out several times by local and national public funds, or for the company to close down, and jobs to be lost (the main reason why Avebe was bailed out). Thus, long term financial sustainability lays the ground for the capacity to produce wealth in an environmentally sustainable way.

The second point is that this justifies a lexicographic ordering where economics are ranked first and environmental and social performance second. However, such an analysis would be superficial. The vision of Ethos is that firms are an instrument of sustainable wealth production, defined not only by consumable goods and services, but also and perhaps above all by environmental quality and social values, health, equity, freedom, mutual respect, and so on[60]. The economics then appear as the most effective means of achieving such goals. The primary aim of Ethos is to foster environmentally and socially responsible management by business firms. Whether it does so on utilitarian or welfarist grounds, because this is what most people want, or on deontological (Kantian) grounds, because it

---

[57] See e.g. A. Boyle & M. Anderson (1996) on “Human rights approaches to environmental protection”.

[58] It would be wrong to reason “no activity, no environmental impact”, for then some other firm would be operating which, by assumption, would in the same branch of activity have a worse impact than a financially strong firm. Shell openly acknowledges this as one of its core values.

[59] The case is described in Essers et al. (1992) in the context of how to reframe situations in order to avoid falling into moral dilemmas.

[60] This is to be taken literally, where in modelling the process of wealth generation, environmental quality and social values would enter the social welfare function, not just consumption of produced goods.

thinks it is the duty of every business to do so, appears immaterial in this case. What is relevant is that a utilitarian-based criterion, finance, is used as a means to achieve another goal which may not be utilitarian. This illustrates a key point made in this paper: a combination of utilitarian and non-utilitarian values may best achieve environmental objectives.

Ethos is a stark illustration of how to get firms to internalise ethical values by use of a particular institution, the capital market[61]. Of course, one could imagine an anti-ethical organisation investing only in unethical and environmentally and socially harmful activities, but it is unlikely there would be any market for it. Which does tell us something of most people's morality when given the right avenues for its expression. As the new institutional economics would have us believe, morality, like many other aspects of social life, is institutionally determined, not just culturally[62].

[61] See A. Argandoña (1995), "The ethical dimension of financial institutions and markets".

[62] See D. North (1990) op. cit.; Brittan & Hamlin (1995), "Market capitalism and moral values"; D. Vickers (1997), "Economics and ethics: an introduction to theory, institutions, and policy"; T. Eggertsson (1990), "Economic behaviour and institutions".

Criteria having had an appreciable impact[63] on the rating of companies by Ethos and its subsequent investment decisions:

ACTIVITY SECTOR	**STRATEGY & POLICY**	**MANAGEMENT & CONTROL**	**PRODUCTION & IMPUTS**	**PRODUCTS & USE**
Production	• Consolidate env policy at whole group level • Allow external auditor the necess info for perform eval • Need proactive info efforts • Good communic from parent company to branches clients, and general public • After merger, best envir communic company to transfer to the other • Clear policy for the future and commitments • Integrate env reponsibilities across branches • Env standardisation across group • Hiding behind local laws is a negative point	• Envir report quality • Be systematic in env control and monitoring • Importance of quantitative measurements & targets and their open disclosure to the public • EMS must appear and be financially & managerially sustainable for the firm • Allow for monitoring of progress over time	• Energy efficiency • Research effort for substitutes of polluting fuels	• Need env impact assess't for infrastruct projects (dam in LDC) • Control shift from better energy efficiency to worse NOx emissions • Eco-efficiency of products • Buy-back of old or faulty machines • Recyclability of product • Life cycle assessment of products • For durable equipment, importance of envir impact during operation
Distribution ***transport*** ***& travel***	• Consider env aspects of business as opportunity • Special effort needed when firm is a monopoly (lack of competitive stimulus) • Mobility needs environ. management		• Energy efficiency • Research effort for substitutes of polluting fuels	• Monitor env impacts of product use & service to customers (energy etc.) • Inform customers of env impact of product use, transport, waste & disposal

[63] That is, a rating of at least ++ if positive and – – if negative. Weaker ratings were + and –. Weaker ratings modified the financial rating of the firm by a smaller factor, meaning that Ethos' investment policy was determined primarily by [the sustainability of] their economic performance. For the stronger ratings, economic performance was 'corrected' upwards or downwards accordingly.

ACTIVITY SECTOR	**STRATEGY & POLICY**	**MANAGEMENT & CONTROL**	**PRODUCTION & IMPUTS**	**PRODUCTS & USE**
Banking	• Include env criteria in investment projects • Certification ISO 14001 • Env performance relative to competitors • Inform stakeholders of env csqces of merger		• Office ecology: energy efficiency, CO_2 effects, paper use, waste mgmt...	• Activate leverage effect • Avoid resorting to external envir expertise • Have an env fund • Niche mkt for env fund is not enough
Insurance	• Proportion of capital invested using env criteria • Actual investments should reflect env declarations • Env policy limited to env risks is not good enough	• Need for systematic action & mgmt of env impacts 0f activities		• Create products allowing clients to invest money in accordance with norms • Explicitly include env clauses in LT contracts • Product ecology

REFERENCES

Anderson, D.R. (1998). Development of environmental liability, risk management and insurance in the United States: lessons and opportunities. *Risk Management and Insurance Review*, 2: 1-23.

Arganodoña, A. (1995). *The Ethical Dimensions of Financial Institutions and Markets*. Springer: Berlin, New York.

Arrow, Kenneth J. (1973). Social responsibility and ecomomic efficiency. *Public Policy*, 21: 303-317.

Attfield, R. (1998). Intrinsic values in nature. *Ecological Economics*, 24: 163-8.

Auriol, E., Lesourd, J.B. & Schilizzi, S. (1998). *Quality signalling through certification*. Paper presented at the AFSE (Association Francaise de Sciences Economiques) Conference, Toulouse, France, 11-12 May.

Baron, M.W., Pettit, P. & Slote, M. (1997). *Three Methods of Ethics*. Blackwell, Cambridge MA and Oxford UK

Bordignon, M. (1990). Was Kant right? Voluntary provision of public goods under the principle of unconditional commitment. Economic Notes

Bowie, N.E. (1999). *Business Ethics: A Kantian Perpective*. Blackwell Publishers, Malden, Mass.

Boyle, A.E. & Anderson, M.R., edit. (1996). *Human Rights Approaches to Environmenrtal Protection*. Clarendon Press, Oxford, UK; Oxford Univ. Press, New York.

R.B. Brandt, R.B. (1979). *A Theory of the Good and the Right*, Oxford U.P.

Brennan, A. (1995). *The Ethics of the Environment*. Dartmouth: Aldeshot, Hants., UK; Brookefield, Vt. USA.

Brittan, S. & Hamlin, A., edit. (1995). *Market capitalism and moral values*. (Proceedings of Section F (Economics) of the British Association for the Advancement of Science, Keele, 1993). Edward Elgar: Aldershot, Hants., UK; Brookefield, Vt., USA.

Broome, J. (1999). *Ethics out of economics*. Cambridge U.P.

Buchholz, R. A. & Rosenthal, S. B. (1998). *Business Ethics. The pragmatic path beyond principes to process*. Prentice Hall, Upper Saddle River, NJ.

Cannon, Tom (1994). *Corporate Responsibility*. *A textbook on business ethics, governance, environment: roles and responsibilities*. Pitman Publishing, Longman Group, UK.

Ciriacy-Wantrup, S. von (1952). *Resource Conservation: Economics and Policy*. University of California Press, Berkeley.

Dallmeyer, D.G., A.F. Ike (Eds.), and A. Young, *Environmental Ethics and the Global Marketplace*, University of Georgia Press, 1998.

Dell, T. *Corporate Environmental Leader : Five Steps to a New Ethic*, Crisp Publications, New-York, 1995.

Denton, D. Keith (1994*). Enviro-management. How smart companies turn environmental costs into profits*. Prentice Hall, N.J., USA.

Donaldson, J. (1990). Business ethics ? What can it do for the bottom line ? *Management Decision*, 28(6) : 29-33.

Donaldson, J. (1992). *Business Ethics : A European Casebook*. (Chap. 8 : European environmental issues, pp. 147-160). Academic Press, U.K.

Donaldson, T. & Gini, Al (1996). *Case studies in business ethics*. Prentice Hall, Upper Saddle River, NJ. (4th edit.)

Drengson, A. & Inoue, Y. (1995). *The Deep Ecology Movement: An Introductory Anthology*. North Atlantic Books, Berkeley, Cal.

Einsmann, H. (1992). The environment : an entrepreneurial approach. *Long Range Planning*, 25(4) : 22-24.

Eggertsson, T. (1990). *Economic Behaviour and Institutions*. Cambridge Univ. Press, UK.

Elster, J. (1989). *The Cement of Society*. Cambridge University Press, UK.

Enmarch-Williams, H.E., edit. (1996). *Environmental Risks and Rewards for Business*. Wiley, New York.

Essers, J., Huiberts, A. & Wempe, J. (1992). 'National Legislation versus International Competition. The Environmental Clean-Up at Avebe'. In: B. Harvey, H. van Luijk & H. Steinman, edit.: *European Casebook in Business Ethics*. Prentice Hall, N.J.

Foot, P. (1967). *Theories of Ethics*. Oxford Univ. Press

Gottlieb, R.S., edit. (1996). *This Sacred Earth: Religion, Nature Environment*. Routledge, New York.

Hanley, N. & Spash, C. (1996). *Cost-Benefit Analysis and the Environment*. Edward Elgar, Cheltenham, UK.

Hansen, J. L., with Christensen, P. A. (1995). *Invisible Patterns. Ecology and Wisdom in Business and Profit*. Quorum Books, Westport, Conn.

Hare, J.E. (1996). *The Moral gap: Kantian Ethics, Human Limits and God's Assistance*. Clarendon Press, Oxford; Oxford Univ. Press, New York.

Harsanyi, J. C. (1976). *Essays on Ethics, Social Behaviour, and Scientific Explanation.* D. Reidel Publishing Co., Dordrecht, Holland / Boston, USA.

Harsanyi, J. C. (1980). Rule utilitarianism, rights, obligations and the theory of rational behaviour. *Theory and Decision*, 12: 115-33.

Harsanyi, J. C. (1992). *Game and Decision Theoretic Models in Ethics*. In: R.J. Aumann & S. Hart: *Handbook of Game Theory*, Vol. 1. Elsevier Science Publishers B.V.

Henderson, V. E. (1992). *What's Ethical in Business* ? McGraw Hill, Inc.

Henderson, V. E. (1984). The spectrum of ethicality. *J. of Business Ethics*, 3(1) : 160-8

Jones, P. & Penninck, N. (1995). *A History of Pagan Europe*. Routledge, London.

Laffont, J.-J. (1975). Macroeconomic constraints, economic efficiency and ethics: an introduction to Kantian economics. *Economica* (Nov.): 430-437.

Laufer, R. (1993). *L'entreprise face aux risques majeurs. A propose de l'incertitude des normes sociales*. L'Harmattan, Paris.

Koechlin, D. and Mueller, K. (Edit.) (1992). *Green business opportunities: the profit potential*. Pitman Publishing, London.

Kohn, R.E. (1993), in *Land Economics* 69 (3), 304-12.

Koslowski, P. and Shionoya, Y. (1993). The Good and the Economical. Ethical choices in economics and management. Springer-Verlag.

Maréchal, J.-P. (1991). *Le prix du risque : l'économie au défi de l'environnement*. Presses du CNRS, Paris.

Mason, H.E. (1996). *Moral Dilemmas and Moral Theory*. Oxford University Press, New York.

McInerney, F. and White, S. (1995). *The Total Quality Corporation. How 10 Major Companies Added to Profits and Cleaned up the Environment in the 1990s*. Truman Tally Books / Plume, N.Y.; Plume Penguin.

McIntosh, M., D. Leipziger, K. Jones, and G. Coleman, *Corporate Citizenship. Successful Strategies for Responsible Companies*, Financial Times - Pitman, London, 1998.

Mirman, R. (1995). Group theoretical foundations of quantum mechanics. Nova Science Publishers, Inc., N.Y.

Mongin, P. and d'Aspremont, C. (1999). Utility theory and ethics. In : S. Barbera, P. Hammond, & C. Seidle (eds), *Handbook of Utility Theory*. Kluwer Acad. Press.

Murray, D. J. (1997). *Ethics in Organizations. Values, codes, vision, strategies, action*. Kogan Page Ltd., Coopers & Lybrand, London.

Nicholson, S. A. (1992). Environmental Ethics. In: Thomas F.P. Sullivan, edit.*: The Greening of American Business. Making Bottom Sense of Environmental Responsibility*. Government Institutes Inc., Maryland, USA.

North, D. (1990). *Institutions, Instituional Change and Economic Performance*. Cambridge University Press, New York.

Pannell, D.J. & Schilizzi, S. (1999). Sustainable agriculture: a matter of ecology, equity, economic efficiency or expedience? *Journal of Sustainable Agriculture*, 13(4):57-66.

Pearson, B., Little, B.F.P. & Brierley, M.J. (1992). *Using environmental management systems to improve profits*. Graham & Trotman: London.

Piderit, John J., S.J. (1993). *The Ethical Foundations of Economics*. Georgetown Univ. Press, Washington D.C.

Pitchford, R. (1995). How liable should a lender be? He case of judgement-proof firms and environmental risks. *American Economic Review*, 85: 1171-86.

Randall A. & Farmer, M.C. (1995). 'Benefits, Costs and the Safe Minimum Standard of Conservation'. In: D. W. Bromley, *Handbook of Environmental Economics*. Blackwell, Oxford UK & Cambridge USA.

Reinhardt, Forest L. (1999). Bringing the environment down to earth. *Harvard Business Review*, 77(4) : 149-157 (July-Aug).

Rolston III, H. (1994). *Conserving Natural Value*. Columbia Univ. Press, New York.

Schein, Edgar H. (1966). The problems of moral education for the business manager. *Sloan Management Review*, 8(1) : 1- 10

Sen, A. (1992). *Inequality Reexamined*. Clarendon Press, Oxford.

Shavell, S. (1986). The Judgment-Proof Problem. *International Review of Law and Economics*, 6: 45-58.

Solomon, R. C. (1992). *Ethics and excellence. Cooperation and integrity in business*. The Ruffin Series in Business Ethics. (Publisher? ...)

Sparkes, Russel (1995). *The Ethical Investor*. - Harper Collins, London.

Sturm, A. (1998). *ISO 14001: Implementing an environmental management system*. Ellipson Publications, Switzerland (www.ellipson.com).

Sugden, R. (1991). Rational choice: a survey of contributions from economics and philosophy. *Economic Journal*, 101: 751-85.

Sullivan, T.F.P. edit.(1992)*: The Greening of American Business. Making Bottom Sense of Environmental Responsibility*. Government Institutes Inc., Maryland, USA.

Sullivan, R.E. (1994). *An Introduction to Kant's Ethics*. Cambridge Univ. Press, New York.

Tietenberg, T. (1996). *Environmental and Natural Resource Economics* (4th edit). Harper Collins, New York.

Van Engelhoven, JMB (1991). Corporate environmental policy in Shell. *Long Range Planning*, 25(4) : 22-24.

Velasquez, Manuel G. (1998). *Business Ethics. Concepts and Cases*. Prentice Hall, Upper Saddle River, NJ. (4th edit.)

Vickers, D. (1997). *Economics and Ethics: An Introduction to Theory, Institutions and Policy*. Preager: Westport, Conn.

Vogel, M.P. (1999). *Environmental Kuznets Curves: A Study on the Economic Theory and Polictical Economy of Environmental Quality Improvements in the Course of Economic Growth*. Springer-Verlag: Berlin, New York.

Welford, R. (1998). *Corporate Environmental Management: 1. Systems and Strategies 2. Cultures and Organisations*. Earthscan, London.

Wells, R. (1995). *Industrial products Inc.: Measuring Environmental Performance*. ABT Associates, MEB Publications, World Resources Institute.

Witoszek, N. & Brennan, A. (1999). *Philosophical Dialogues: Arne Noess and the Progress of Ecophilosophy*. Rowman & Littlefield, Lanham, Md.

Zimmerman, M.E., edit. (1998). *Environmental Philosophy: from animal rights to radical ecology*. Upper Saddle River, N.J.: Prentice Hall.

Figure 1 : Relativistic definition of private vs. social, selfish vs. altruistic.

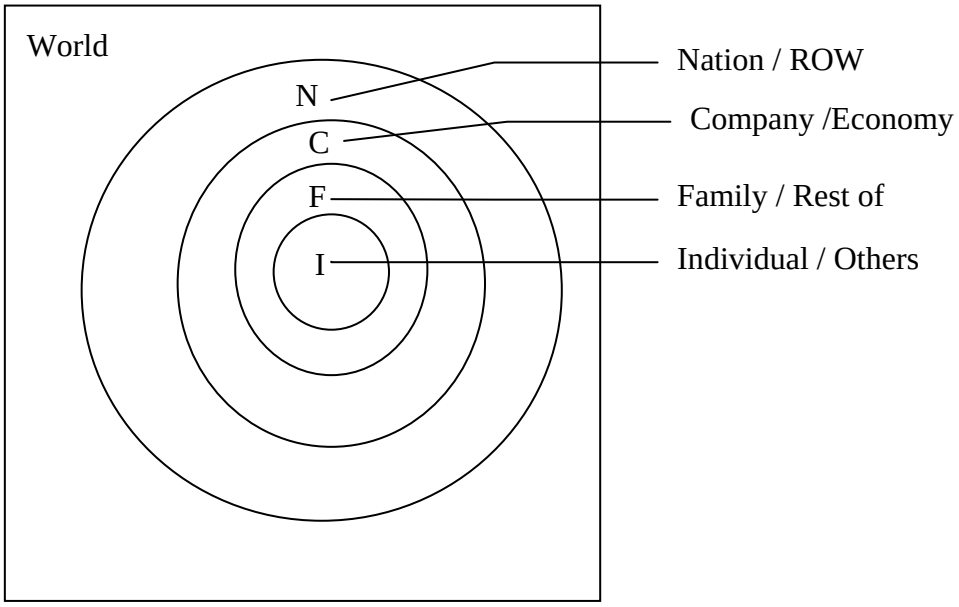
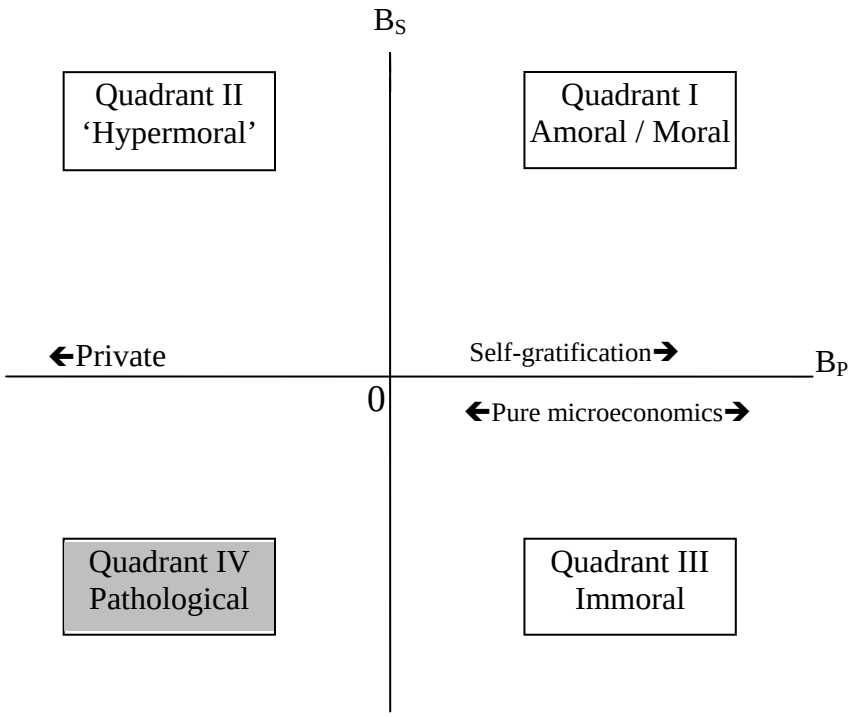


Figure 2 : A framework for ethical - economic analysis (static)



B_P : Net private benefits
B_S : Net social benefits
Total $B = B_P + B_S$ (not fixed)

Figure 3 : Fixed commitments and positional rents

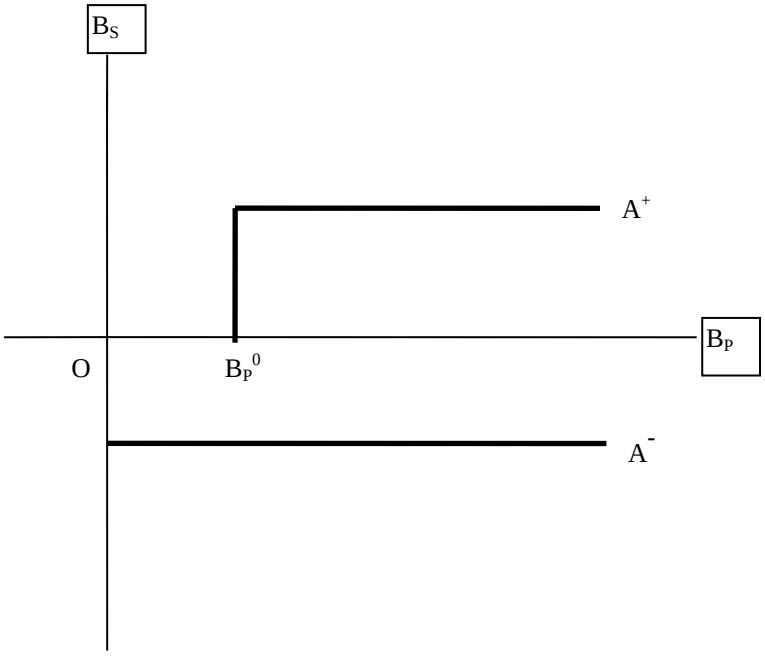


Figure 4 : 'Morality' of economic behaviour

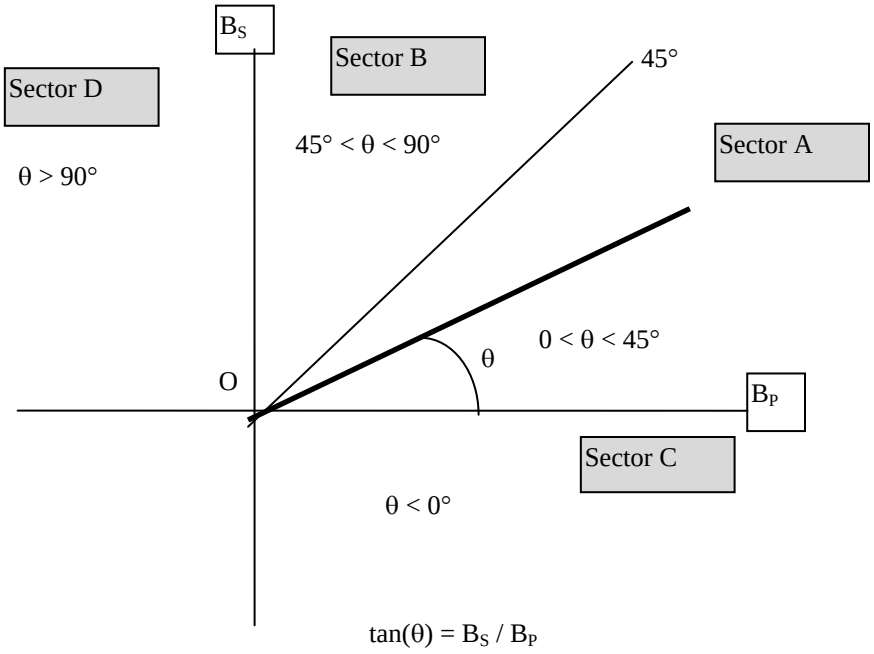


Figure 5 : Moralisation as translations in ethical-economic space

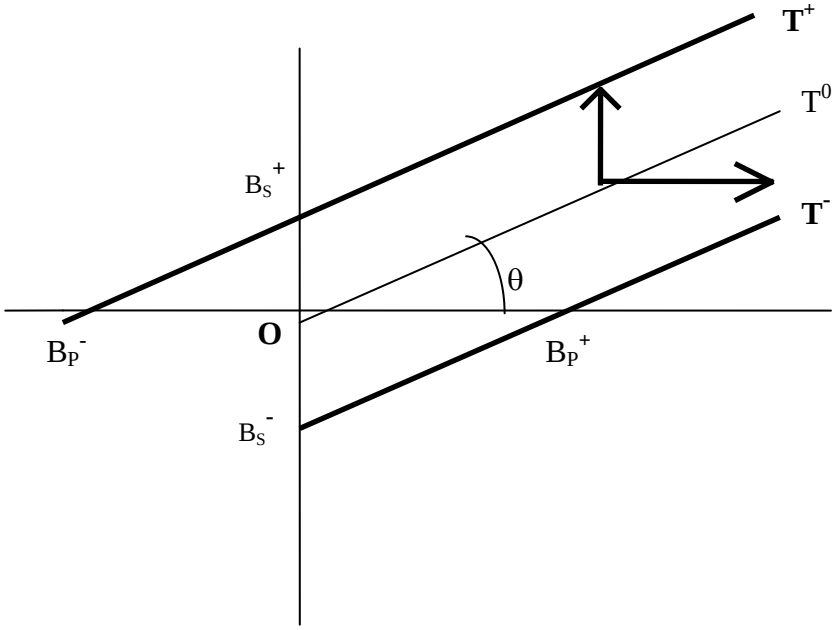
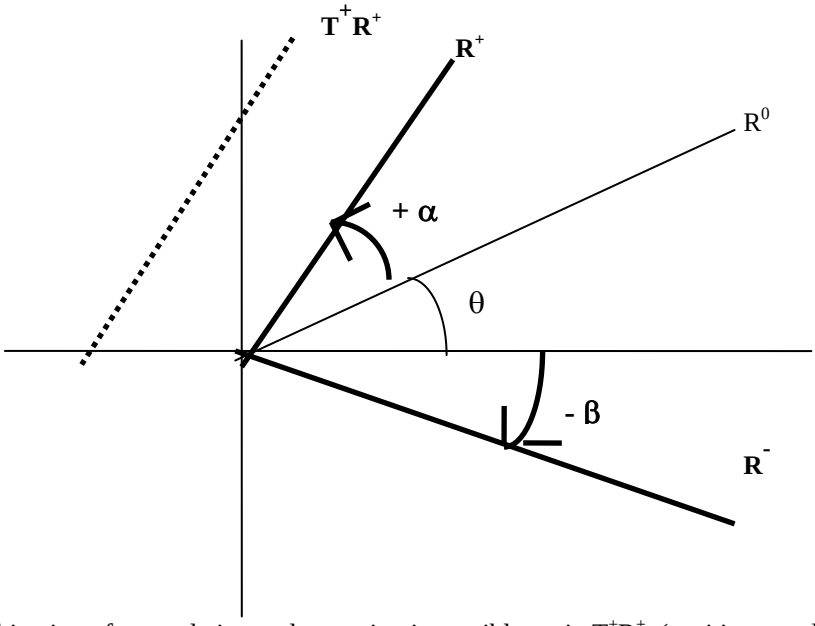


Figure 6 : Moralisation as rotations in ethical-economic space



A combination of a translation and a rotation is possible, as in $T^{+}R^{+}$ (positive translation, positive rotation). Four (4) types of movement are possible.