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**Converging Paradigms for a  
Co-evolutionary  
Environmental Limit Discourse**

**by**

**William Konchak and Unai Pascual**

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# Converging paradigms for a co-evolutionary environmental limit discourse

William Konchak<sup>a</sup>, Unai Pascual<sup>b</sup>

<sup>a</sup> Institute of Transpersonal Psychology, 1069 E. Meadow Circle Palo Alto, CA 94303, USA

<sup>b</sup> Department of Land Economy, University of Cambridge, UK.

## Abstract

This paper argues that the static vision in ecological economics of a fundamental clash between a neo-classical self-interest perspective and limit discourse as de-ontological perspective is an ineffective route towards disseminating environmental values and consciousness. Following the Ego'n'Empathy idea as a fusion of both perspectives to refocus the paradigm of ecological economics, it is argued that this evolution may face intense resistance from entrenched positions. A conceptual exploration of the roots of such resistances is discussed and an alternative, but complimentary process that addresses the need for and process of a synthesis is proposed. As an exemplar of this argument, the Porter Hypothesis is discussed as a complimentary guiding framework of how ecological economics as an action oriented paradigm can increase its influence as a policy guide, in terms of achieving sustainable development within entrenched and confrontational policy contexts.

**Keywords:** Environmental policy, economic growth, Porter Hypothesis, altruism, evolutionary economics

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## Address for correspondence

Dr. Unai Pascual  
University of Cambridge  
Department of Land Economy  
19 Silver Street, Cambridge CB3 9EP  
United Kingdom  
Tel: + 44 (0) 1223 337151  
Fax: + 44 (0) 1223 337130  
e-mail: [up211@cam.ac.uk](mailto:up211@cam.ac.uk)

## 1. Introduction

Social and environmental systems co-evolve and interrelate framing a holistic model for human and environmental interaction. This interaction is complex and asks for the establishment of a plural discourse to incorporate multiple perspectives into environmental policy decision making. It is usually claimed that the gargantuan fossil fuel economy is the root of our most pressing environmental problems and the inability to tackle them (Constanza et al., 1997, Hamilton, 2004, Ozkaynak et al., 2002, 2004). This materialistic line of thought can be traced back to Kant's Critique of Pure Reason, where the focus on scientific values began, forward through the Vienna Circle, and up to the present (Faber et al., 1996). These views are well articulated and appealing. In addition, there is also a sister stream of thought in this discourse based on morality and ethics.

Most environmental moral discourse is dialectical in terms of de-ontological argument (reason, with duties) vs. utilitarian (desire, for self-interest), with most moral thought on the de-ontological stream. This is also the case within ecological economics (EE henceforth) where in contrast to neo-classical (environmental) economics (NE), it advocates that preferences may not be all encompassing, as decisions can be 'other regarding'. This involves various beliefs about values that often have deontological components (Sagoff, 1998, 1998). More generally, as EE is as much science as it is ideology (Söderbaum, 1999) it is based upon a rich critique of western metaphysical and ethical values, openly claiming ethical positions rather than neutrality (Spash, 2000).

The other two fundamental tenets in EE that are the main focus of the discussion in this paper are the idea of 'co-evolution' and 'scale'. The former implies the equilibrating dynamics between human and natural systems (Norgaard, 1994) and the latter entails explicit biophysical limits to the flow of material between the environment and the economy, epitomized by the well established, although continuously refined, limits to growth discourse (Daly, 1973; Wackernagel and Rees, 1996; Spash, 2000).

Here we argue that the limits discourse as it stands as a static ideology, rather than as a scientific paradigm, is counterproductive not only in respect to policy making, but that it may also limit the evolution of environmental consciousness. Taking an evolutionary

perspective, we argue that the envisioned clash between homo economicus self-interest perspectives and the de-ontological limit discourse, although effective in past decades to stir environmental consciousness, needs to co-evolve in order to effectively promote effective environmental stewardship perspectives. A potentially groundbreaking solution to this dilemma is the recently proposed Ego'n'Empathy hypothesis (Hayes and Lynne, 2004), whereby the ego (self-interest) needs to be balanced with empathy (environmental care). The hypothesis proposes a workable theoretical framework that may lead to a synthesis of perspectives, possibly initiating a new paradigm for environmentalism. However, this requires a paradigm shift, one which may face intense resistance from entrenched positions. This paper explores the roots of such resistances and proposes an alternative, but complimentary process that addresses the need for and process of synthesis utilizing the Hegelian thesis/anti-thesis/synthesis model. Some insights of how an evolved paradigm could be more effective in policy making are discussed utilizing the Porter Hypothesis (PH) as an exemplar of an appropriate language and approach for entering into high-stake sustainability policy discourse and for disseminating of higher order environmental values.

The outline of the paper is as follows: The next section examines the premises within the EE discourse to discuss their overall effectiveness towards influencing policy for environmental protection. Then a model to understand how a common discourse could evolve towards a reconciled idea of environmental stewardship and economic growth, and how this could contribute to an evolution in environmental consciousness is presented in section 3. Section 4 introduces the Porter Hypothesis as an exemplar of a new paradigm together with a brief case study of how such a discourse has been recently shaped in practice. The last section recapitulates the main points and provides various basic principles that emerge from the overall argument.

## **2. Whither limit discourse?**

Kant argued for reason as a basis for moral argument and the inclusion of the categorical imperative, which severed the moral from desire and self-interest. Following Blackburn's

(2001) idea of morality, it can be argued that this impact is still felt today, where most environmental moral discourse is dialectical in terms of deontological argument (reason, with duties) vs. utilitarian (desire, for self-interest), with most environmental moral thinking involving inviolable rights and on the deontological stream (Spash, 1997).

While Hamilton (2004) argues that our society is obsessed by economic growth and wealth, which he describes as a 'growth fetish', we suggest that to a certain extent this follows the self-denying restrictive moral foundation of western society. Through the history of western thought, a schism effectively has split self-interest from altruism and 'reason over desire' arguments and self-denying, ascetic tendencies (amplified by the Church) have prevailed. Shadowing the process of science becoming more materialistic (and industry and society more exploitative), morality became more restrictive through Victorian times. Attacks against restrictive moral thought can be traced back to Nietzsche and through existential thought, where increasingly there was less value, and more existential freedom, and an empty worship of preference, which paralleled the attempts of the Vienna Circle to remove any non-verifiable metaphysical component to science. This has continued into post-modern thought, where one senses that it runs from 'ought to', and rushes to 'do its own will'.

Today's 'valuelessness' may not only be a result of materiality and self-interest, but a reaction to the psychological impact of excessive moral restriction. As traumatic experiences create negative fixations and interrupted developmental milestones cause fixation on the satisfiers of unmet needs and compulsive behaviour (Washburn, 1995; Hartman and Zimberoff, 2003), a simple psychoanalysis would reveal that in light of these restrictions, society has become fixated on its desires, creating a 'growth fetish'. The deep schism of deontological duty, as a force to override all self-interested desire, has contributed to two distorted manifestations in present day society, the growth fetish (consumerism) and an anti-growth fetish (or limit discourse).

Closely attached to morality is its restriction on sexuality, codified as an act of dissipation, leading to death in the organism (Foucault, 1988). Entrenched within EE and codified through the second law of thermodynamics, it can be said that economic growth is seen as an act of dissipation (entropy), leading to the destruction of society and the

environment. The question is whether this is a perpetuation of an age-old discourse, which has now taken a new form in the environmental sphere, and whether this may represent pure restriction as an end in itself.

A critical example is that the second law applies only to closed systems, the earth being an open one (Norgaard, 1994, Ayres, 1998), thus possibly leading falsely to fatalistic conclusions. Norgaard (1994) suggests that several forms of environmental determinism, including mechanistic and entropic determinism, are maladaptive. This suggests that the second law ought to be seen as an analytic tool rather than from an ideological perspective. In addition, according to Faber et al. (1996: 133), "the interpretation of the second law as imposing an absolute constraint on economic growth, be it quantitative or qualitative, has turned out to be too pessimistic". So, why is limit discourse so prevalent? Norgaard (1994) argues that it is because those who engage in this discourse feel it is the only way to have a voice in policy making. But this has its consequences. From an evolutionary point of view, what may have been ideal to address the problems in past decades may be maladaptive in the present, at least when utilized as an over-arching ideological perspective. Treasured viewpoints may need to evolve in order to facilitate their original intention.

An alternative (second) stream of limits discourse involves ethical value based critiques of economic growth and utilitarianism, epitomized by "surely it makes sense to inject into the debate moral concerns about the well-being of future generations, even if these arguments require questioning and criticizing individuals' sincerely felt preferences" (Norton et al., 1998: 200). More radically, according to Amy (1987) and Forester (1992), both ethical and public-regarding arguments of the environmentalist camp may be compromised since they may not have more standing than purely self-interested preferences. It would seem that within the EE discourse there is an effort to suggest that environmental values trump mere preferences. However, this is a morally questionable tact and ought to be approached with due caution. Even if it is justifiable, how can we find out which values are correct? Moral philosophy suggests that "what may happen is that someone is brought to see things as a virtuous person does, and so stops feeling the need to ask it" (McDowell, 1978: 23). However, this is not a satisfactory answer as different people have different views of what is virtuous or moral.

While EE may seem to push for higher order environmental values, it is one thing to come up with moral judgments, but yet another to claim that certain actions necessarily follow, particularly when they override personal preferences. Much of the rhetoric within political ecology seems to mimic these efforts and its dissemination through EE comes up with a definite view of 'what is moral', largely based on economic restriction. In this context the second law often operates within environmental discourse as a general anti-growth rule. Even when arguments are subtle and hardly seem to refer to limits, this restrictive foundation is almost always implied (Norgaard, 1994).

Environmental protection is inevitably framed in terms of self-sacrifice to do the right thing, which reflects limited personal viewpoints which are often portrayed as altruistic. Further, attempts made to project shame or guilt for environmental problems upon society may be ineffective in terms of gathering popular support to find solutions (Roszak, 1995). In fact, other views of what constitutes morality exist and particular moral views often reflect the limits of a given paradigm. Ethical tenets on the environment such as care and husbandry for Nature can be jeopardized, twisting what would be natural and appealing, engaging both self-interest and ethics, into a framework of self-denial. The question is how those with ethical values can effectively disseminate them to promote environmental protection, yet avoid the morally difficult idea of overriding personal preferences. This question assumes that there is a split between moral value and self-interest. While not trying to argue out morality, the point here is that a significant common ground between altruism and self-interest can exist.<sup>1</sup> It is within this context that ego (self-interest) and empathy (altruism) may find a third form of emergent value (Hayes and Lynn, 2004), or enlightened self-interest that leads to moral outcomes as a consequence, not as an a priori directive. For instance, Norgaard and Bode (1998) point out that there are advantages of speaking in the dominant economics language, perhaps, in our view, the most important not

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<sup>1</sup> The theoretical foundation for a merging of self-interest and ethical duty actually lies within the EE discourse, through the conception of a holistic world with complex interactions. If we extend this thinking into the moral realm, presumably an act would not only affect the acted upon, but the actor himself due to the complex interrelationships and circular feedbacks that govern a co-evolutionary world. This would mean that moral notions are inherently self-interested as well, as deeds affect the whole of which the actor is a part.

having to attempt the most onerous task of throwing out utilitarian theory and preferences as the basis for environmental responsibility.

A closely appealing (third) line of limit discourse in EE is that affluence does not necessarily lead to happiness. Hamilton (2004) even argues that whether resources are finite or not is irrelevant, as an infinity of resources would only delude society into believing that wealth can lead to contentment, suggesting that the core difference between neoclassical (environmental) economics (NE) and EE is that the former is an unapologetic extension of 'imperialism' whereas the latter lays the foundation for a stationary state post-growth society. Apparently because affluence does not lead to a 'path of contentment', society should realize this and pursue other goals. But, just because wealth need not lead to happiness (at least as western societies use it), would limiting wealth do so? To suggest what leads to another's happiness is not only questionable, but has left environmentalism wide open to influential destructive critiques (e.g. Beckerman, 1995).

Hirsch's (1976) theory of positional goods suggests that it is relative, not absolute affluence that leads to utility. As society may be locked into various path dependant 'treadmills', so that the ex ante evaluation of utility is distorted, a rat race leading to suboptimal behaviour is created (Binswanger, 2003). Thus, if handled correctly, these important psychological and economic insights may potentially be springboards for not only fostering environmental protection through promoting more co-operative utility enhancing perspectives and alternative values within society, but a better psychological relation to self. However, these ideas do not imply that economic limitation is essential and hence approaching a society that is obsessed with material growth through the language of limitation may not be a fruitful tactic. If EE could present these ideas within a framework that emphasizes the benefits of co-operation and equity (as opposed to yet another 'proof of the need for limits), this could become more effective in promoting alternative values and the distributional equity and political justice that EE views as essential to sustainable development (e.g. Faber et al., 2002) and the synthesis of egoistic and empathetic paradigms (e.g. Hayes and Lynne, 2004).

Another (fourth) confronting idea that is well and appropriately articulated within EE is that technology adjustments alone cannot correct for most environmental problems

(Norgaard, 2002). Further, the need of the precautionary principle and plural discourse when confronted with the inherent uncertainties resulting from the development and application of new global technologies (e.g. GMOs) is an idea coined by EE which is increasingly accepted in the policy arena (Niemeyer and Spash, 2001, O'Neill, 2001). While some technologies such as GMOs may be shaded by corporative interests associated with dubious innovative advantages, we argue that relying on fear of technology as an approach to global environmental problems (e.g., global warming) may be detrimental to the extent that it can limit innovative environmental problem solving thinking.

While the I=PAT discourse by Daily and Ehrlich (1992), albeit with few technical adjustments, has few critics within EE (Fischer-Kowalski and Amann, 2001; Schulze 2002), efforts towards ecological modernization or eco-efficiency are often criticized as being fundamentally disruptive to environmental policy prescriptions, as they do not involve needed changes in human behaviour (Hukkinen, 2001). The point is that these claims are questionable as again there is no physical (as the second law of thermodynamics does not entail a growth limit in practice), moral (there is no way to prove that it is a moral imperative to limit growth), or contentment (limiting growth may not make us happy) basis to substantiate them. Notwithstanding that technology alone is not a solution in itself, we argue that it can be instrumental to achieving environmental protection, both in terms of creating reasonable discourse and by establishing a progressive vision for society. If we are to apply a dynamic, holistic, co-evolutionary worldview with any internal consistency we ought to consider the human capacity to adapt and innovate too. In accordance with Swaney (1987), what is needed is an institutional approach that is flexible and responsive enough to encourage and implement technological innovation while at the same time avoiding posing threats to the compatibility of the sociosystem and ecosystem evolution, while yet subtly educates and promotes environmental perspectives.

Finally, it is important to recognise that the EE discourse is based upon normative ideas of intra --and inter-generational equity and political/ecological justice as EE is inherently as much science as it is ideology (Söderbaum, 1999; Martínez-Alier, 2002). The challenge is how to effectively promote these normative ideas of justice, where distributional policies often lead to policy resistance by the more powerful leading to lax environmental

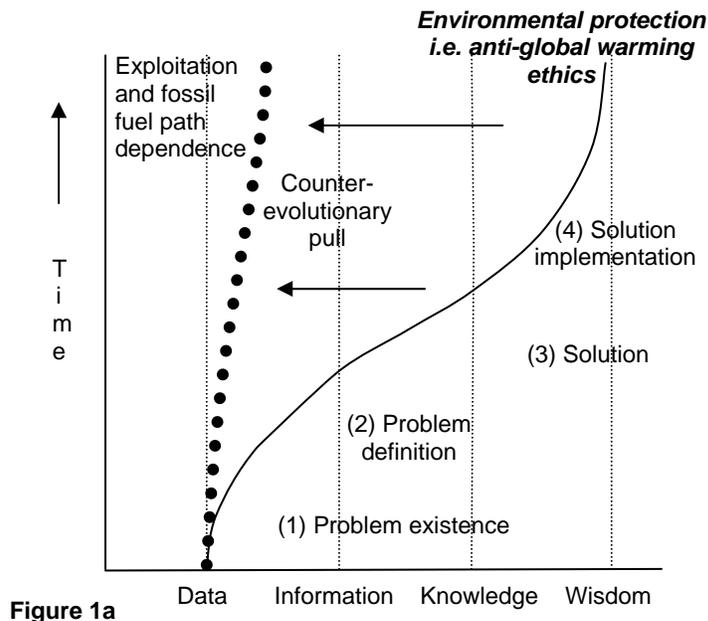
protection and thwarting sustainable development efforts by influencing environmental policy choices (Dietz and van der Straaten, 1992). Kohlberg's (1981, 1984) theory of moral development would predict this occurrence, as moral evolution has various stages (he describes six stages, the higher the more developed), with self-interest placed quite low at level two, whereas notions of abstract justice are up at stage six. One possible solution is for those who have reached higher stages of moral development to articulate their viewpoints in a form that can appeal to wider societal interests and at the same time promote ethical evolution. We argue this could be achieved within an enlightened paradigm.

### **3. A constructive discourse for sustainability**

At a theoretical level, Norgaard (2002) points out that any idea of sustainable development should provide a forum for common discourse between multiple perspectives, in and outside science. This is reflected in practice too. Scruggs (2003), in a recent comprehensive survey of what factors influence country-wide environmental performance, concludes that the combination of organized and encompassing economic interest groups, coupled with consensual policy making and implementation between environmentalists, companies, workers and governments have superior environmental performance than those countries where interest groups are weakly organized and confrontational.

In order to explore how the separated discourses or paradigms of NE (e.g. growth fetish) and EE (e.g., limits to growth), are locked within their own perspectives, we need look no further than the problem of global warming, where science informs about the seriousness of the problem (IPCC, 2001). Figure 1a depicts how a problem of this nature could be tackled naturally in an evolutionary way. The first stage of identifying the problem has already been passed, and the problem definition stage (stage 2) is continuously being articulated. There are some suggestions for solution specification (stage 3), for which little has been

done to design and implement any effective plan that is essentially global (e.g., the Kyoto accord). Despite science, industry still lobbies against progressing along the evolutionary flow curve to find real solutions. As a result, the economic counter-evolutionary tendency represents the continuous questioning of facts by industrialist interests (e.g., oil industry), and fear discourses suggesting that active policies towards CO2 reduction would hurt the '(American) way of life' of society at large, etc. (Goodstein, 1999). Hence, a stagnation in the data gathering stage has occurred as opposed to moving along the evolutionary flow. Herein too lies the great limitation of NE, as from an evolutionary point of view, the market may not react to information and implement needed adjustments, instead pursuing 'Pareto optimal' path dependence. Thus as van den Berg (2003) notes efficiency based policy prescriptions become "short term and feeble", avoiding focusing on the structural changes in environmental and economic systems that involve uncertainty, adaptation, and path dependence.



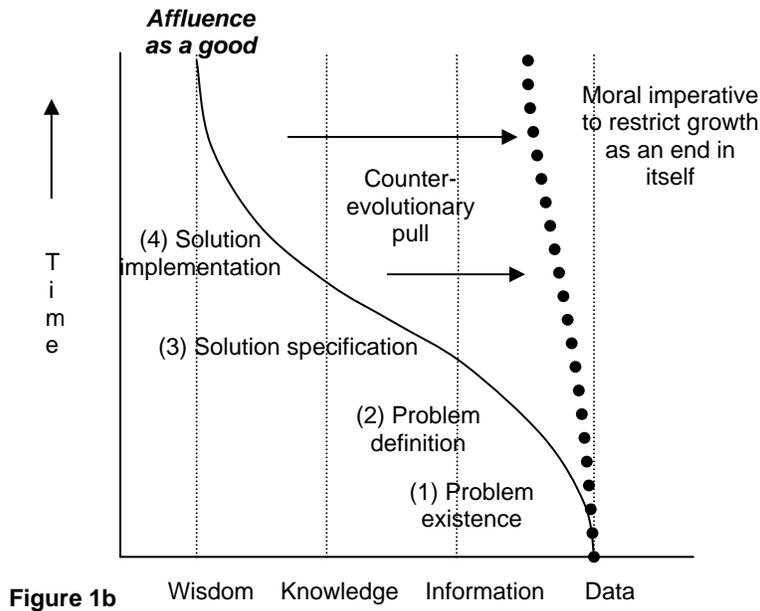


Figure 1b Wisdom Knowledge Information Data

Figure 1. Taxonomy of the 'knowledge infrastructure learning curve' under competing paradigms (economic exploitation versus moral restriction), adapted from Conner (1998)

However, we also wish to argue that an important limitation of the environmentalist camp lies in the general outright restriction of economic growth, making it a value issue and a moral imperative to be acted upon. Figure 1b depicts the consequences of this counter-evolutionary tendency. This too may distort the reaction to climate change, not allowing the flow of knowledge, not working to adapt, but instead to restrict, manifesting itself in various ways, such as the hope that we enter a recession to limit growth demanding radical shifts in for instance consumer behaviour. For instance, there may be much lower than expected cost in order to impose strong mitigation measures in terms of emission control (Hamilton, 2004). So, framing environmental protection just in terms of limiting growth may be counterproductive, thus resembling the QWERTY phenomenon in terms of encouraging environmental stewardship.<sup>2</sup>

<sup>2</sup> 'QWERTY' stands for the first six letters of today's typewriters. This keyboard system was deliberately arranged to compensate for the limited technology of early typewriters as if they were arranged more efficiently they would jam (David, 1986). Of course, there is no need for this today as computer technology has overcome this limitation, but we continue to use the slower keyboard system because of this path dependence.

Society needs to jointly mobilize its environmental and economic interests towards a common goal and objectively evaluate the situation to act, integrating both interests. Notwithstanding that dualistic viewpoints are often a response to uncertainty and that seemingly irreconcilable perspectives can arise, learning to develop evolutionary syntheses is the key to bridging paradigms and creating resolutions. If we examine both NE and EE paradigms closely, despite the appearance of radically different viewpoints they may in fact share a crucial common foundation of scarcity. NE (ideologically paralleled by industry) tries to overcome this through growth, (but never can as scarcity is always implied because of diminishing marginal returns, there is never enough, a true 'growth fetish'), and industry creates fears that environmental regulation will lead to economic collapse. On the other hand, EE (paralleled by environmentalism) also focuses on scarcity through the second law of thermodynamics, depleted resources, and fear of fatalistic consequences, etc. This situation is represented in Figure 2.

Using Malsow's (1970) hierarchy of needs, the actual situation leads both paradigms towards focusing on the lower rungs or deficiency needs. On the one side, instead of moving up the hierarchy and actualizing the self in relation to the self, artificial bonds are sent out to consumer goods, creating false identities. Despite the claim that wealth on its own may not always lead to happiness, and presumably actualization, prosperity is identified as one of the factors essential to making self-actualization possible (Maslow, 1970). But although wealth may offer the opportunity to pursue higher order goods it would seem that by having failed to utilize wealth in this way western societies are stagnated by materialism on those lower rungs of existence. On the other side, the grand environmentalist focus is on the very survival of Nature (physiological and safety needs) together with the fear of scarcity (Ehrlich, 1968, Meadows and Meadows, 1972). Environmentalism may lead to intuitive knowledge beyond moral rules, leading to an 'ecological consciousness' (Hamilton, 2004), but given the emphasis on questioning the quest for economic growth, one wonders whether ecological consciousness is reached or whether a pre-formulated ideology is locked in beforehand. Hence, this leads to most effort

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going into restriction and critique (as opposed to consciousness expanding), also relegating itself to Maslow's lower rungs.

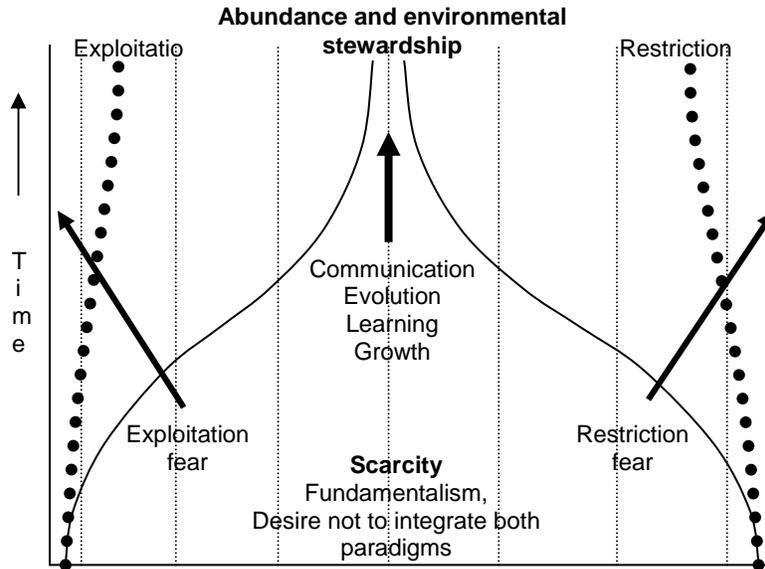


Figure 2

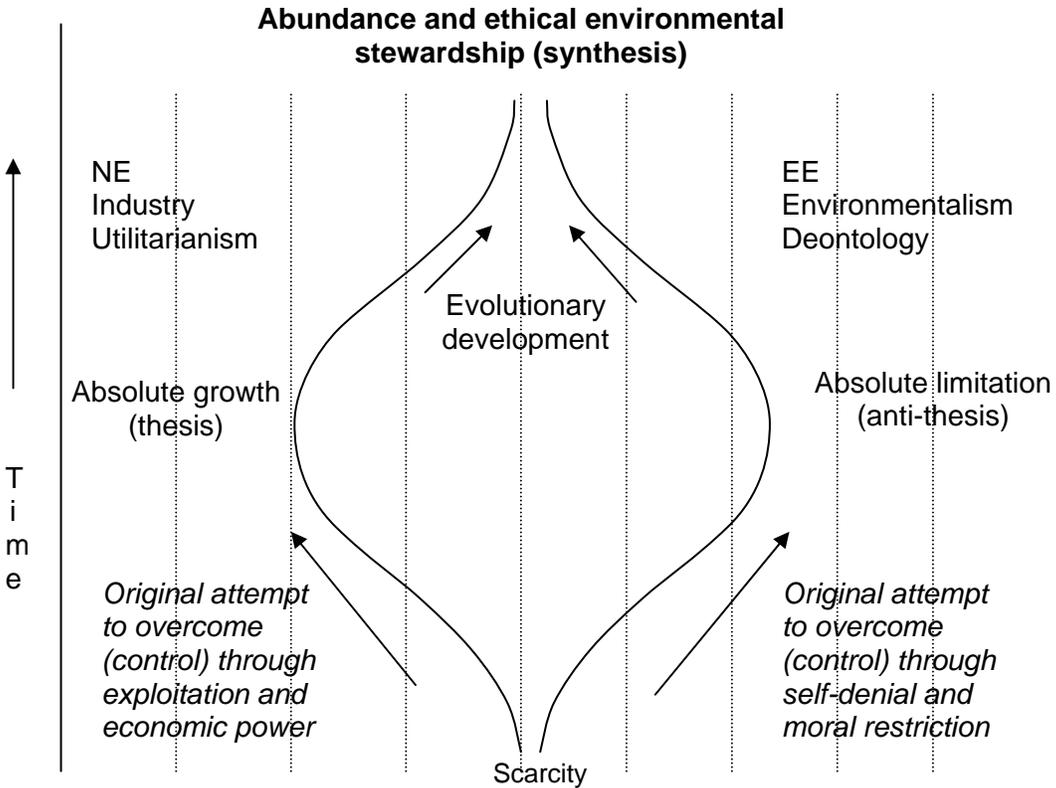
Figure 2: Evolution from competing paradigms based on the fear of scarcity

Nevertheless, there is a space to discuss higher order issues when the discourse moves beyond limitation, opening the possibility for a vista of actualization and wider openness within the EE paradigm. EE addresses different concepts of culture (Hart, 2002), ethics (Gowdy, 1994; Spash, 1997), democracy (Niemeyer and Spash, 2001, O'Neill, 2001), philosophy (Faber, 1996), the nature of progress and learning and knowledge across epistemological communities (Norgaard, 1994, 2004), and even consciousness itself (Hamilton, 2002, 2004). While these views are positive, we argue that as they become de-shackled from the limits to growth sentiment, a move in society to higher order goods could be initiated more effectively.

Both paradigms are held back by their collective weaknesses if there is little or no discourse between them. Once perfect information is taken away, in both the economic and moral sense, two things fall: consumers/industry preferences and activities do not lead to

optimal outcomes, nor can deontological and thermodynamic prescriptions necessitate limiting economic growth. In the vacuum of this bounded rationality, active discourse with a true plurality of perspectives is needed to facilitate learning (Figure 3). This would follow the Hegelian process of thesis-antithesis-synthesis or converging/diverging thought theory already discussed by Schumacher (1973).<sup>3</sup>

The process of synthesis becomes in an evolutionary sense a real vertical leap in thinking that overcomes the dialectic of exploitation/self-denial that, we argue, rests primarily on the foundation of scarcity.



**Figure 3**  
 Figure 3: An emergent bridging of discourses towards an enlightened paradigm

<sup>3</sup> The inevitable transition of thought, by contradiction and reconciliation, from an initial conviction to its opposite and then to a new, higher conception that involves but transcends both of them. Interestingly this can be found in ancient symbology such as the caduceus wand and modern quantum theory. Figure 3 depicts this dualistic process, which would continue ad infinitum.

An interesting contribution in this regard is how to go beyond the 'economist within', so that we can reconnect with our intuitive self (Hamilton, 2002). Similarly, we would have to get beyond the 'moralist within', that is equally attached to rational rigidity, or better yet start an active communication between the two, so to try to resolve their conflict.<sup>4</sup>

The problem is similar to that of Sagoff's disassociation between citizens and consumers, the homo economicus and the homo moralis do not communicate. At a societal level, this schism is echoed by the NE versus EE paradigms. The therapy or paradigm evolution should seek not to eliminate one or the other, but to break down the rigidity and lack of communication between the two, creating self-transparent identities with permeable boundaries and cooperative interaction between them. With this fluidity, ideally a consumer may embody both ethics and self-interest simultaneously (Hayes and Lynne, 2004).

Further, in terms of competing discourses, key to the process is the recognition of bounded rationality, so a common discourse can be developed through dynamic evolution and move from conflict, trade-off and compromise to a more productive one that upgrades both paradigms to a new synthesis. We argue that this process could help to lead to an evolution in environmental consciousness, and as discussed earlier, an institutional framework such as Swaney's (1987) could be helpful to this process. As an example, we can focus on the Porter Hypothesis as complimentary guiding principle of how ecological economics, as policy-driven science (Shi, 2004), can more effectively engage in high-stake confrontational environmental policy making.

#### **4. The Porter Hypothesis: An exemplar of an evolutionary policy guiding paradigm**

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<sup>4</sup> According to psychology, individuals have different ego states which arise in different circumstances (Watkins, 1993). The rigidity of separation between these states is determined by the degree of disassociation; mild dissociation results in more flexible boundaries and severe dissociation results in rigid, impermeable boundaries (Hartman and Zimberoff, 2003), perhaps even leading into pathological states. Arguably the 'growth fetish' and 'anti-growth fetish' as played out at a societal level with no common integrated goal can be classified as pathological.

While most environmental regulations are currently based on command and control incentives, the environmental policy setting is increasingly being influenced by the idea that market based economic instruments such as tradable permits and taxes promote a more complete internalization of externalities, dynamic efficiency and possible double dividend effects. However, command and control instruments are often the preferred option due to the effects of uncertainty, equitable distribution, ease of monitoring, and even ethical reasons. More importantly, for our argument, is that command and control instruments are often viewed by NE and industrialists as limiting incentives to innovate, thus hurting the economy and by potentially higher rates of non-compliance due to opposition, the wider environment. A major reason for this viewpoint, as Hahn and Stavins (1991) contend, is that environmental policy participants are used to a static, rigid, and confrontational structure as the 'way of doing things'. It can also be argued that the static mindset provided by NE reinforces the assumption of an environmental/economic trade-off in the policy world, making it difficult to incorporate alternative views.

Against this backdrop, Porter's (1990) idea that companies and countries can improve their operations and competitive advantage by shifting the focus from whether opportunities exist to how to develop and exploit them, is a provocative one. The Porter Hypothesis (PH) transposes this focus into the environmental realm, resting on the idea that properly designed environmental regulations may not only lead to lowering the cost of abatement (dynamic efficiency), but may also create innovation offsets which can ultimately provide absolute advantage over those not facing such regulations.<sup>5</sup> Following Jaffe and Palmer (1997), the PH can be divided into a weak version, i.e., environmental regulations stimulate innovation, and a strong version, i.e., regulations actually lead to competitive advantage.

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<sup>5</sup> In terms of innovation offsets in companies, these can come about through the spurring effect regulations have on firms by forcing research and investment, which can lead to production process improvements, higher quality products, and new markets through first mover advantages. The external shock of regulations may also reduce intra-firm inefficiencies and organization failure (Gabel and Sinclair-Desgagne, 1997), trigger the restructuring of capital stock so that average productivity increases (Xepapadeas and Zeeuw, 1999), and reduce lending costs (Konar and Cohen, 2001).

We argue that the PH as exemplar opens the door to a common vision or paradigm. According to Argyrous (1992),

"...a paradigm-as-exemplar is able to ground a puzzle solving tradition by indicating how apparently diverse situations can be seen as essentially similar, so that they are susceptible to the same procedures. In so doing, it provides a bridge between abstract theory, such as axiomatic statements and metaphysical presuppositions, and the wealth of problems, both theoretical and empirical, that a scientist may have to deal with" (Argyrous 1992: 236, emphasis added).

While criticisms of the PH have largely rested upon profit maximizing assumptions,<sup>6</sup> recent evidence suggests that environmental regulations do not hurt firm competitiveness (Jaffe et al, 1995, Roediger-Schluga, 2003), good environmental performance does not put firms at an inter-industry disadvantage (Cohen et al, 1997), and often what were perceived as environmental compliance costs become investments, fostering competitive advantage, often with a relatively short pay back time (Porter and van der Linde, 1995, van Dijken et al., 1999). Hence, it is worth questioning why the PH has not been explored more comprehensively as a practical policy exemplar of building up an evolutionary paradigm that can break the inertia of antagonistic paradigms based on the economic growth fetish and the moral environmental imperative.

The PH, an exemplar in Argyrous's terms influencing environmental policy making, can be seen at work in the Netherlands, a country that has one of the most stringent environmental policy in the EU (Zito et al., 2003). As in the battles that are currently being fought in most national and international environmental policy settings, in the early stages of Dutch environmental policy there was confrontation, with each government department having its own specialist information. The Environment Department (ED) took the approach of using 'scientific truths' to combat environmental degradation, while their

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<sup>6</sup> Palmer et al., (1995: 120) suggest that if the PH were true, "there are lots of \$10 bills lying around to be picked up".

opponents argued on the basis of their 'economic truths'. Hence, as usual, the argument was expressed in simplistic and confrontational terms of 'the environment' versus 'the economy', in which the economy generally had the upper hand (de Jongh and Captain, 1999). The ED's response was to start by looking for common ground between the environment, industry and the government. They took the unusual step to group economic sectors together (as opposed to grouping by pollution media, such as water, air, soil, etc.) to help facilitate discourse and improve communication. Once they began to speak the same language, this led to more opportunities for consensus and industry started to take the step of approaching the ED to collectively work towards pollution abatement.

Much of the gains in the Dutch system have been accomplished by implementation of voluntary agreements or covenants between government and the economic sectors. According to Akker (2000), voluntary agreements can work from an industry perspective if there is: (a) clear and achievable targets, (b) recognition of mutual benefits, (c) the threat of sanctions, and (d) trust. Clear targets are essential to formulate discussion and goal setting, while sanctions are essential to limit free rider behaviour. More importantly in the context of the argument of this paper, it is essential to find where mutual benefits lie (so there is some point in talking) and the PH has a great deal to offer in this regard. The Dutch system's success seems to stem from its application of ecological modernization principles combined with framing the environment in terms of sustainability and a holistic cross sector approach (Zito et al., 2003).

Lastly, as the cost of regulatory uncertainty can be significant to business and stifle environmental investments which may be advantageous in the long run, a common enlightened discourse that can help to better predict policy, is an essential ingredient to long-term planning and process oriented innovation. As committed discourse occurs, over time trust and greater co-operation can be better established, replacing the exploitation/resistance dynamic between stakeholders, facilitating a more progressive environmental management and reasonable industry responsibility. Although there is still conflict between government departments themselves and how they relate to industry, the

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ED's efforts to create instruments for integration have allowed communication flows to help resolve in a more fruitful manner the economy versus the environment schism.

## **5. Conclusion**

This paper has addressed the viewpoint that the static vision in ecological economics of a fundamental clash between a neo-classical self-interest perspective and a limit discourse as a de-ontological perspective may not be an effective way to disseminate environmental values and consciousness. An evolutionary framework has been presented that provides a potential way ahead for ecological economics to reinterpret the abovementioned clash. This follows a Hegelian thesis-antithesis-synthesis process or diverging thought approach, with synthesis as a true evolution. In other words, a vertical leap in thinking that overcomes the dialectic of exploitation/self-denial that rests on the foundation of scarcity. By harnessing the opposing forces or paradigms a vision can be recreated that allows for the manifestation of an alternative, and hopefully, more effective form of environmentalism. This is crucial, as we argue that the most important factor in determining the level of environmental stewardship is not environmental awareness, not personal values, but a higher order discourse between the pro-growth and anti-growth camps. This is paralleled by the need to integrate neoclassical and ecological economics if the latter wants to become, in the words of Martinez-Alier (1999: 136), the real "orchestration of the sciences" and hence of differing ideologies. The Dutch example provides a practical example of how these principles can help reconcile the economy and the environment, either minimizing or eliminating some of the seemingly existing trade-offs.

The paper has underlined that there is an under appreciation for the adaptability of social structures even within ecological economics, to the extent that it is necessary to fully acknowledge and highlight the inherent trade-off between economy and environment as Gowdy (1994) refers to. Industry has been slow to adjust to environmental issues, and posing them in terms of the need for a loss of affluence has contributed to this inertia. The ability to resist losing affluence is not to be underestimated, as well as the ability to adapt in

order to maintain affluence if this is threatened. We deem it necessary to frame environmental stewardship as being essential to economic prosperity to harness this desire and further environmental protection. More importantly, incorporation of this perspective may be essential to improve environmental policy making, thus calling for an evolution beyond the various permutations of the limit discourse.

This paper has explored the possibility of a new paradigm bridging these differences, arguing that the Ego'n'Empathy Hypothesis (Hayes and Lynne, 2004) providing a theoretical basis and the Porter Hypothesis providing a practical basis for a common discourse to help break the deadlock between industrialism/business and environmentalism. In order to understand the potential impact of the Porter Hypothesis, we argue that it is important to appreciate that this paradigm suggests that a laissez-faire market does not maximize economic welfare. This perspective gives ample room to not only question whether neo-classical policy prescriptions are appropriate environmentally, but economically as well, a perspective that may be essential to promote environmental interests in today's policy world and loosen the distinction between self-interest and altruism, essential to the articulation of the Ego'n'Empathy hypothesis. It is suggested that utilizing this discourse, which can accommodate both economic and environmental perspectives, may be more effective towards disseminating environmental values, presenting them in terms which may be more appealing to policy makers. More concretely, the following basic principles may help in this process:

We propose the strengthening of a true co-evolutionary perspective untainted by over-emphasizing limit discourse, which can be presented to policy makers as a reasonable framework for decision making. Limits may be appropriate in particular circumstances, but this needs to be articulated within a broader context of environmental goals. In this respect the following normative points emerge:

- The second law of thermodynamics should be used as a tool as opposed to an ideological perspective
- Strengthening the idea of the precautionary principle while accepting that appropriate environmental technological innovations should be encouraged.

- The Porter hypothesis and related ideas such as ecological modernization and eco-efficiency can mitigate the environment/economic trade-off and create a common ground for discourse. Embracing this should facilitate an enlightened self-interest perspective which can lead to better environmental protection in the present and into the future as ethical environmental values can be disseminated within a common paradigm.
- Emphasis should be placed on social institutions that can promote consensus building, equity, prosperity, and environmental stewardship within this structure, so that individuals are active agents under such system, not merely locked into it by economic necessity. The Netherlands and Scandinavian countries are suggested not yet as perfect, but positive examples of this in practice.

It is hoped that with these basic principles, a common ground can be found between competing environmental paradigms and possibly pool their resources, maximizing their collective impact in environmental policy. At one level, this represents a shifting of environmental perspectives in a pragmatic sense, so that environmental protection can be promoted rather than an all-or-nothing approach which only guarantees that nothing can be achieved (Goodin, 1994: 592). However, at another deeper and more significant level it represents a possible evolution in thought, one which can help to unlock consciousness to a higher scale which is essential in terms of fostering environmental protection. Such a shift may prove difficult however; funding may be dictated by free market institutions and industrialists with their vested interests; and stagnant moral perspectives may bind some ideologically, and stepping beyond the perceived 'moral goodness' and 'doing the right thing' of limit discourse may prove personally challenging. This will no doubt be exacerbated by the moral suasion that those who choose to remain embedded within their respective paradigms may wield.

We agree with the ecological economics view that the reductionistic structure of western science and society may limit the effectiveness of environmental policy making, and depart from the idea of advocating a compromise position or a perpetuation of western metaphysics and epistemology that some have suggested as being sufficient for environmental stewardship (e.g. Passmore, 2002). However, our viewpoint is that the

environmental discourse itself is also deeply immersed within this same dialectic metaphysics and should also evolve into superior forms to help initiate these needed changes. Western society is in need of an enlightened discourse that can heal the rift between self-interest and duty that has been perpetuated within society and the psyche of individuals within it, which has currently evolved into a new permutation as the economy versus the environment. Environmental degradation is not the cause of our current problems, but the result of a bad understanding of ourselves and our relation to the world.

In the end, perhaps it does come down to the strong versus weak argument. Not strong or weak sustainability or strong or weak versions of the Porter Hypothesis, but whether we have a strong or weak 'philosophy'. Do we have the weak kind that likes to stay in its own paradigm even if it isn't working, likes to hold onto economic or moral platitudes to the bitter end? or the strong kind, that steps forward to new horizons, breaks down old barriers and looks for new solutions in a new age. The answer to this question has a direct bearing on inter-generational equity. Do we wish, as ecological economists, to perpetuate our dialectical thinking onto the next generation? or will we evolve and synthesize it into a better form and create a new paradigm for environmentalism?

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