

# Can ESG Grasp What Ecology Says?

*Economics fails to grasp the sort of thinking ecology is, but a cause for optimism is that we all have both an economic and an ecological brain.*

by

Duncan Austin\*

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## Introduction

A delightful story last month: Satish Kumar, the Editor Emeritus of *Resurgence & Ecologist* magazine, visited the renowned London School of Economics and suggested that his hosts reconstitute as The London School of Economics *and Ecology*.

Over tea and cake, Kumar enquired about LSE's ecological offerings, to which he was informed there were several courses which integrated environmental issues into economic frameworks. 'But environment and ecology are not the same,' he replied. 'Ecology means understanding of the entire ecosystem and how the diverse forms of life relate to each other.' To which the response was: 'That is too broad a concept. Our courses are much more specialized.'

I like the story for two reasons. First, I enjoy the thought of a distinguished guest speaker politely asking his hosts whether they have considered being the opposite of what they are! It strikes me that more guest speakers at more events might usefully ask the question.

The more serious reason is that Kumar's provocative idea, and the defensive response, catches the very essence of our ecological sustainability challenge: that economic thinking still fails to grasp the *sort of thinking* ecology is, particularly ecology's focus on *relation*.

The significance is less about improving university programs and more because it is exactly this misunderstanding that underlies our continued failure to solve major ecological problems despite the growing attention paid to them.

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## Economics and Ecology

To begin to explain, I have a proposal for an inscription over the door of any new School of Economics and Ecology:

*'Ceteris paribus'*  
*(Economic method)*

...  
*'When we try to pick out anything by itself,  
we find it hitched to everything else in the Universe.'*  
*(John Muir, Ecologist)*

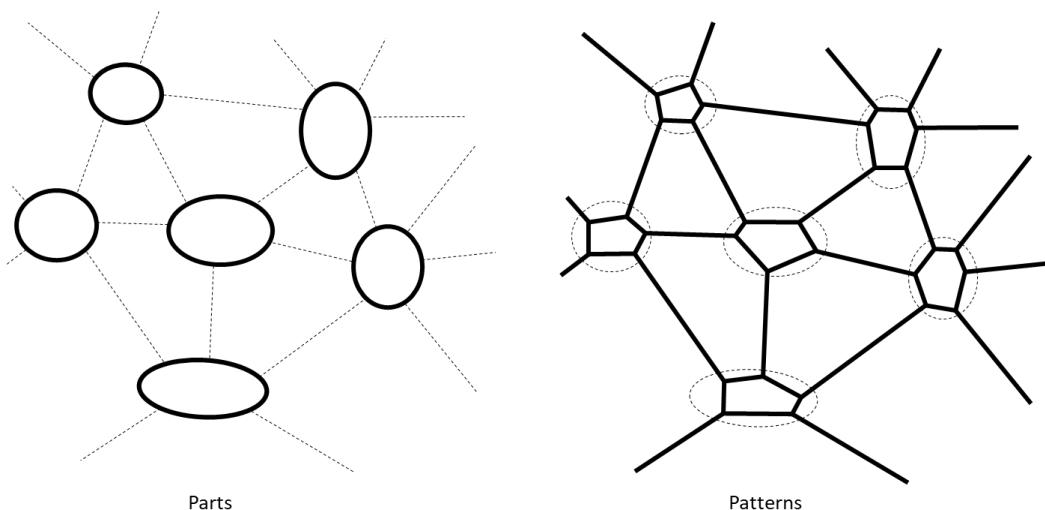
...  
*And so, we begin...*

This captures that economics and ecology separate from the very outset, by the way in which they attend the world. Any attempt to reconcile their concerns that does not return to these first principles is doomed to fail.

Central to economics is the act of severance: “*ceteris paribus*” – ‘assume all else remains equal’ – and now we can proceed.” Economics cuts and reduces to formulate tractable problems that admit of elegant solutions, but the process inevitably renders economics a deeply decontextualized body of knowledge.

In contrast, ecology emphasizes connection, evident not just in Muir’s quote, but also in Garrett Hardin’s proposed first law of ecology: ‘you cannot do just one thing’.

In other words, ecology denies the legitimacy of ‘*ceteris paribus*’, while economics views ecology’s desire to hold everything in mind as impractical. Ultimately, they differ in how to ‘see’ the world. The economist implicitly chooses to see parts, the ecologist to see patterns. Each choice is valid, but different. They are complementary, but in tension.



**Figure 1:** Parts or patterns? *Ceteris paribus* or everything connected? Neither view is categorically ‘correct’, but economics and ecology lean on – and so reinforce – a part-view or pattern-view, respectively. (Adapted from Capra, 1997)

Another critical distinction is that the ‘*eco*-’s of economics and ecology are different!

‘Economics’ is the older term derived from the Greek *oikos* (home) and *nemein* (to manage). It is the ‘management of my home’. In contrast, ‘ecology’ was coined by Ernst Haeckel in 1869. He combined *oikos* with *logos* (the study of) but conceived of *oikos* as our entire planetary home – so, ‘the study of Nature’s house’. Economics and ecology exist in a nested relationship. Economics is the management of just a small niche of Nature, whereas ecology is just the study of all of Nature.

The two terms differ not just in scope but also in attitude – managing versus studying. A way of seeing not only changes what is seen, but also invites a different way of being. Seeing the world as separable invites the economist to think its parts might be better allocated than they are. In contrast, seeing the world as connected leads the ecologist to ponder why it has come to be connected as it is.

In other words, a School of Economics and Ecology would have a job on its hands. Its challenge would not be to blend the different domains of study under the same mindset – combining plants and profits in a single analysis – but to train students to see in complementary, but conflicting, ways.

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*Economics and ecology exist in a nested relationship.*

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## The Capture of Ecology by Economy

It may now be clearer why our visions of ‘green growth’, ‘win-win’ and ‘sustainable capitalism’ continue to struggle. They are the vehicles by which we have embraced ecological concerns, but still resist the accompanying mindset to which those concerns point.

While ‘environmental economists’ argue that we can easily correct markets by pricing carbon emissions and other pollutants – no matter that we barely have, in practice – the larger issue is that many of our ecological challenges are not amenable to a commodification ‘fix’, which relies on treating the environment as parts.

The issue comes to a head in the question of whether we should impute dollar values for ‘ecosystem services’ – to put a price on the Amazon, say. The question is not whether we can impute such values, but rather whether it is intelligent to do so. In this critical matter, which has divided ecologists, is the issue of whether ecology should yield to a dominant economic way of thinking or make a stand for its different way of seeing – *a different way of appreciating and valuing* – that challenges economics’ monetary default.

The pragmatic view has been to impute monetary values because we cannot afford for ecosystems to be valued at zero, which is otherwise the case. Indeed, when such estimates are made, they reveal that the ‘value’ of global ecosystem services dwarfs global GDP! Market measures of value miss more than they grasp.

However, something important is lost by doing this because it forfeits the opportunity to challenge the adequacy of monetary valuation to capture the connectedness of ecology. Of course, this has been an almost impossible argument for ecologists to advance because, today, we find ourselves in a profoundly market-centric culture, for reasons that long predate awareness of our global ecological challenges.

The point is not that markets are inherently bad, but that today's *market primacy* may be detrimental. With markets privileged – and non-market institutions discredited – government has been unable to correct the market's omission of so many recognized externalities, let alone advance non-market regulations or prohibitions to protect our ecology. Less than 1 percent of global GHG emissions are currently priced at a level sufficient to meet the Paris Agreement. We are arguably making even less progress in establishing measures to safeguard global biodiversity.

There has been a 'double capture' of ecological thinking by economic thinking. First, economics can only readily accommodate those ecological concerns, such as carbon emissions, which are discrete and separable. Second, the *realpolitik* of a market-centric culture, bolstered by the primacy of economic thinking, means that market actors wield real political power to prevent the internalization of even those 'externalities' which economic thinking can stretch to!

There is a critical asymmetry in the way markets extend. Markets eagerly reach out to embrace new profit opportunities but rebuff the internalization of new costs. As the decades go by, this ensures that markets become ever more extractive in nature.

## ESG: Solution or Symptom?

At the heart of this lies the flourishing ESG movement. In a market-centric world, efforts to protect our ecology have had to fit under the larger neoliberal narrative, and the emergence of a burgeoning ESG movement is in many ways a logical consequence. ESG aims to be a *solution* to our environmental and social challenges but is really a *symptom* of deeper cultural trends set in motion long before the Great Acceleration commenced.

As a market-based movement, it has had to uphold a market-friendly narrative, evident in some of its key refrains: 'win-win', 'doing well by doing good' and more. But the narrative that protecting the global environment must be profitable, and consistent with 'economic' growth increasingly seems implausible. Market measures exclude so much ecological value that decision-making anchored upon today's partial financial statements *is* the problem. ESG does not constitute 'ecological' thinking but rather the appropriation of some ecological concerns into a framework that remains steadfastly economic.

Effectively, a long-gestating neoliberalism met a nascent environmentalism, and the result is the modern ESG movement, which may simply not be enough. It is increasingly urgent that we comprehend that such a movement is limited not by the sincerity or enthusiasm of its proponents, but by the form of thinking it constitutes and so reinforces. Certainly, members of the ESG community can play a key role here, but it will require considerable reappraisal of the meta-strategy that voluntary action by the private sector can deliver sufficient change, fast enough.

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## Our Economic and Ecological Brains

Now, for some better news. We are all both ‘economist’ and ‘ecologist’!

Evolution has granted us an ‘economic’ left brain and an ‘ecological’ right brain because both are beneficial, even if they must be in tension. So, the issue is whether we are in balance.

I believe this is one conclusion of Iain McGilchrist’s landmark work, *The Master and His Emissary*. McGilchrist, both neuroscientist and humanities scholar, argues not only that our left and right brains perceive the world in fundamentally different ways – complementary, but in tension – but also that the long arc of human history reveals left-brain ways of thinking inexorably asserting themselves over right-brain ways.

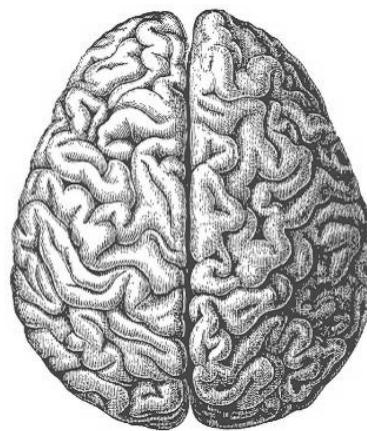
Though McGilchrist bases his argument primarily on developments in the humanities, today’s primacy of economic over ecological thinking – even in the face of a deteriorating global ecology – appears to be a key manifestation of left-brain ascendancy. Our left, ‘economic’, brains are ‘crowding out’ our right ‘ecological’, brains, creating overshoot problems our left brains cannot remedy because they uphold the sort of cognition that created the problems in the first place!

In other words, the real solution to our sustainability problems may not be ‘out there’, but ‘in us’.

A critical difference McGilchrist identifies:

*‘One of the more durable generalisations about the [brain] hemispheres has been the finding that the left hemisphere tends to deal more with pieces of information in isolation, and the right hemisphere with the entity as a whole.’*

Ceteris paribus and John Muir? Our abilities to hold ‘all else equal’ and to perceive that everything is connected appear to emanate from different brain hemispheres. Indeed, perhaps we have bihemispheric brains because successful cognition requires these two ‘visions’?



**Figure 2:** Human brain seen from above. The longitudinal fissure divides the brain into left and right hemispheres. (Not visible is the corpus callosum lower down, which holds the hemispheres together.)

Though the left brain is biased to see the parts of the world, it seeks to formulate a coherent ‘whole’ story using the parts it is aware of. Hence, the left brain *reduces and reconstitutes* the world, but its reconstituted world can only be as accurate or ‘complete’ as the parts it has discerned, which may fall short of the more holistic right-brain view. (In turn, the right brain gives up detail for a better grasp of the whole).

Yet even though the left brain's perception of the world is decontextualized, the left brain is highly influential with its control of language and its inclination to 'do'. This combination sets us up to transform the world with blinkered appreciation of the consequences.

The problem today, McGilchrist argues, is that we are out of balance. In a long review of cultural history, he describes a steadily more assertive left brain making the world more amenable for it. While positives abound – medicines and vaccines, planes and trains, warm homes with glowing screens – something is also lost in that we inhabit an increasingly mechanical, fragmented, and uprooted world.

While the notion of a whole civilization in the grip of a 'left brain runaway' may seem fanciful, it is possible because of the reinforcing dynamic of culture. The reflexivity between our *plastic* brains and our *plastic* culture constitutes a feedback loop in which mind shapes culture shapes mind, a so-called 'mind-culture co-evolution'.

## Reductionism and Systemism

A critical 'recent' left-brain advance has been the Scientific Revolution, which vaulted the left-brain's reductionist perspective to ascendancy. Broadly, left and right brains underwrite our complementary capacities for reductionism and systemism of which economics and ecology are among key respective flagships.

Reductionism is the idea that we can best understand the phenomena of the world by breaking them into parts, learning how those parts work and then 'adding back up' this knowledge to arrive at a superior comprehension of the whole. It is a process of 'reduce and reconstitute'.

The problem with reductionism, as is increasingly understood, is that complex systems exhibit *emergent* properties, which cannot be anticipated even from complete knowledge of the parts, but only discerned from observation of the whole.

Nonetheless, reductionism earned its spurs because it proved spectacularly successful at explaining the behaviour of 'dead' things that were the dominant objects of enquiry at the dawn of the Scientific Revolution. Alas, those early successes profoundly shaped the way we believed all science should be conducted, so that we applied an intrinsically reductionist scientific method to a more complex 'living' natural world, including ultimately ourselves.

Reductionism crept up the 'disciplinary stack', from physics to natural sciences to social sciences, ultimately to shape economics.

We conceived of *Homo Economicus* and built a model of the world around that conception and have ever since been trying to live up – live down, really – to that self-image. Central to that model – and to our current faith in markets – is the left-brain inspired idea that society can be *reduced* to rational individual 'agents' endowed with entirely independent preferences who exchange *parts* of the world in a market system that has the magical power to 'add everything back up' to arrive at the best of all possible outcomes. It sounds exactly like the sort of place the left brain would like to inhabit. But the model denies that the complex system of human society has emergent 'public' attributes that might be more than the sum of its 'private' monetizable parts.

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*Left-brained reductionism crept up the 'disciplinary stack' to shape economics, and then politics.*

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Unfortunately, because of politics' tendency to follow economics with a lag, these ideas jumped into our socio-economic reality to inform our current market-centric culture. A sub-plot of our 'mind-culture coevolution' has been a 'mind-market coevolution' in which minds shaped markets shaped minds.

## A Systemic Spring

Encouragingly, a 'Systemic Spring' is now under way in which multiple disciplines are racing to incorporate the insights of complexity thinking. As Brian Arthur, the pioneer of complexity economics, articulates: 'complexity is not a science, rather it is a movement within science.' If so, it is the complement, with a 300-year lag, to the reductionism that 'went first'.

What is genuinely exciting about systemic science is that it introduces a rigorous way of seeing relation over part, effectively advancing a right-brain view of the world in terms the left-brain can understand – a development that might enable economics to grasp ecology!

As systemic awareness spreads, we realize that we effectively fell into a 'valley of reductionism' – not without considerable benefit, but whose cost has been that it postponed or derailed our comprehension of complex 'living' systems, such as society and ecology.

In essence, today's neoliberalism is what results when you apply scientific techniques suitable for analysing dead things to the living fabric of society and ecology and pursue them to their logical conclusion.

As Gregory Bateson, the early systems thinker, expressed:

*'Epistemological error is all right, it's fine, up to the point at which you create around yourself a universe in which that error becomes immanent in monstrous changes of the universe that you have created and now try to live in.'*

Unwittingly, and through no-one's explicit design, we reduced ourselves.

A Systemic Spring, advancing a right-brain perception of the world, may yet be a key remedy for the Silent Spring of which Rachel Carson warned. But it needs to be accelerated.

Where Einstein said you cannot solve problems with the same sort of thinking that created them, what McGilchrist effectively says is that you cannot solve problems with the same brain hemisphere that created them.

While our sustainability crisis presents as rising sea-levels, shrinking forests and disappearing species, the front line of our struggle is the corpus callosum that divides the human left and right brain. This is where our sustainability crisis will ultimately be resolved, or not.

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## What to Do?

So, what should we do? (Asks the left brain!)

Here are two ideas:

- Reverse our perception of primacy; and
- Create a left brain AND right brain culture, by revitalizing our sense of ‘public’.

### 1. Reverse the Primacy

Systems thinking suggests we have got the primacy between economic and ecological mindsets the wrong way around.

In the history of neuroscience, the left brain was long deemed the superior hemisphere – an assumption now under review. It is becoming clear that the left brain can only do its beneficial work within the broader contextual awareness the right brain provides. If anything, primacy lies with the right brain, not the left. The right brain is the Master, the left brain the usurping Emissary.

The dynamic seems to repeat at the level of human culture. Our market-centric culture has granted primacy to the economist, not the ecologist, which may be the wrong way around. Of course, we do have to ‘manage our house’ (economics), but we must also care for the state of Nature’s house (ecology). In getting the nesting wrong, we are stewarding our planet inside-out rather than outside-in.

Keynes captured part of this ‘inside-out’ problem in the relationship between the stock market and the broader economy:

*‘When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done.’*

This pattern repeats at the next level up: when the stewardship of our ecosystem becomes a by-product of the activities of the economy, the job is likely to be ill-done.

Put the layers together and our situation today is that we are managing the planet as a by-product of an increasingly frenzied stock market – now buffeted by automated algorithms and chat room raiders – that is virtually oblivious to environmental context even as it daily transmits the signals for how to allocate the financial capital that transforms the physical world.

McGilchrist remarks: ‘the left brain doesn’t know what the left brain doesn’t know.’ By the same token, the market doesn’t know what the market doesn’t know, but we have told ourselves that it is all-knowing: ‘markets are the solution; government is the problem’!

Sustainability requires that we nest markets within a broader conception of human self-organization. Our challenge is not to build a sustainable economy but to develop a sustainable culture that has an economy.

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## 2. Rebalance Culture by Re-legitimizing ‘Public’

While there is much we can do to revitalize right-brain perspectives in our own lives, the key challenge is to scale that attitude. The secular institutions that can most uphold and restore a relational perspective of our society and ecology are ‘public’ and public-affirming institutions – from community to civil society to various levels of government.

If left-brain thinking prompted the ascendancy of market over non-market institutions, we might attain a more sustainable culture by revitalizing the institutions left behind by that ascent. Indeed,

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*One of government’s real benefits to society is its potential not to amplify market forces but to modulate them.*

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before today’s ‘neoliberalism’, there was an ‘embedded liberalism’ in which market and non-market institutions were more finely balanced. Critically, part of government’s real value to society is its potential not to *amplify* market forces but to *modulate* them – to correct their many omissions and to curb any dangerous runaway dynamics.

Of course, today’s story is that government should unleash market forces and stand back. This was premised on the idea that the market was ‘self-regulating’. And often it is. If demand for bread increases, the price of bread rises inducing more supply, so bringing the price back down. Markets frequently exhibit ‘self-regulating’ dynamics.

However, markets are *not only* self-regulating, *but also* susceptible to positive reinforcement loops that can become runaway problems. Arthur crystallized this in 1990, when he identified that economic systems did not just exhibit ‘diminishing returns’ – or balancing loops – but also ‘increasing returns’ – or reinforcing loops. This has become easier to grasp in a world of ‘winner take all’ businesses and technology platforms.

Moreover, the possibility of reinforcing loops *in* the economic system can accumulate to make a reinforcing loop of the whole system! A telling signal is that our biggest problems - global debt accumulation, wealth inequality, climate change and biodiversity loss – all exhibit runaway dynamics. Neoliberalism has effectively become a runaway feedback loop of a human operating system in which large swathes of the global population are now caught up.

### ***Governments are trapped in the loop...***

A key problem is that our contemporary narrative, ‘markets are the solution; government is the problem’, has snared governments in this loop.

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*Neoliberalism has become a runaway feedback loop of a human operating system.*

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Governments increasingly use economic performance – even stock market performance! – as a measure of success, which negates their ability to counteract markets. Other loops are more tangible. For example, corporations use profits to lobby for lax regulations that enhance profits which can be used to lobby for still laxer regulations, etc. This dynamic – Friedman’s Feedback Loop, call it – has compromised government’s ability to improve human welfare by modulating market forces.

As these loops have run over the past few decades, so our collective capacity to act on any principle that conflicts with profit has diminished. It has been impossible to argue that we ought to value and protect our environment for moral reasons, not just monetary ones. And this larger discourse has ultimately forced an ESG movement into its increasingly implausible ‘win-win’ stance that we only need implement profitable projects to arrive at a sustainable culture.

### *...as are corporate leaders*

Even more trapped in the loops are corporate leaders, in whom such great hope has been placed!

Yet, corporate leaders are so bound by fiduciary duties, share-based compensation, and business norms that they are now among the human beings *least* able to lead on global public goods problems. This is not necessarily a reflection of who CEOs innately are, but rather what our culture turns them into. Alas, the ascent to corporate leadership transforms men and women with leadership ability into profit-maximizing administrators. Less CEOs, more PMAs.

These PMAs are just the apex of the larger private sector community which now contains millions of people wondering why it is that business norms require them to make routine decisions at odds with social and ecological wellbeing. ‘Whose dumb idea was all this?’ is the merged thought bubble one can sometimes see forming over the skyscrapers of the City of London.

Possibly, the transfer of US leadership to a genuine public servant might disturb corporate leaders into recognition of the shackles in which they are bound but breaking out will be difficult. Behind corporations is an investment industry, themselves heavily incentivized, that acts in aggregate as a global profit enforcement agency, quick to force any public company with costly ‘stakeholder’ ambitions back into profit-maximizing line.

And behind the investment industry stands millions of savers and pension fund holders who check their quarterly statements hoping for higher, not lower, financial returns. We are all chained into an unsustainable system, but we then expect those *most* bound by its logic to lead the way out.

These private sector challenges are a subset of the challenges of society writ large. They can only be resolved at the public level. The broader problem is that free democratic societies can only respond to any new large-scale emergency if a majority understand – *and accept* – the situation. Hence, the educational work of the IPCC, Al Gore, Cristiana Figueres, David Attenborough, Greta Thunberg, and many others has been so critical – even as they have had to suffer insults from those who would shoot the messenger.

Which brings us back to the key institution that is education and to Mr Kumar’s advice for LSE. For, one way to promote understanding – and acceptance – is to aggressively accelerate systemic thinking at all levels of society.

## Conclusion

I sincerely hope LSE consider Satish Kumar's suggestion. It feels as if there is some civilization-bettering leadership up for grabs. For one of the top 10-ranked economics universities to embrace ecology on ecology's terms might stimulate thinking and action well beyond its walls. It might prompt business schools, finance programs and executive education courses to follow suit.

Systemic thinking will not only enhance economics' ability to understand issues it already cares about – an *intra-economics* benefit – but it will also force the discipline into a new *meta-economic* awareness. Economics, today, is no more than a reductionist carve-out of monetizable pieces of the larger complex systems of society and ecology.

In similar fashion, while the ESG community may benefit from embracing systemic thinking to improve execution of its established goals, the real benefit – though much greater challenge – of systemic thinking is that it will force reappraisal of the meta-strategy ESG represents.

Satish Kumar's provocative idea was of course good rhetoric for a lecture, but name changes alone cannot achieve much. More meaningful and more actionable is to commit to develop the research and pedagogical capacity to bring ecological thinking into all economic and business arenas.

However this may happen, the first point to impress upon students at a School of Ecology and Economics is that the two disciplines differ in the ways they attend to the world, both of which are valuable, but which have fallen out of balance. Neither, in itself, is right or wrong, but what may be wrong is not to pay them equal attention. Until our culture is clearer on the significance of their difference, we are unlikely to be successful stewards of the global ecosystem or to have the long future we might.

*'Ceteris paribus'*

...

*'When we try to pick out anything by itself,  
we find it hitched to everything else in the Universe.'*

...

*And so, we begin...*

**Duncan Austin has had a 25-year career as a sustainability researcher and investor. In 1995, he obtained a MSc in Environmental and Natural Resource Economics. Oh, well.**

**This article is excerpted from a longer essay, 'Can Economics Grasp What Ecology Says?' available at Responsible Investor and at [www.bothbrainsrequired.com](http://www.bothbrainsrequired.com).**