
A journey into the foundations and transformative implications of social ecological economics: An interview with Clive Spash

Voyage dans les fondations et les implications transformatrices de la socio-économie écologique : entretien avec Clive Spash

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OLIVIER PETIT : Thank you for taking the time to talk about your vision of social ecological economics. Let us start with your academic background. Could you reflect on the different stages of your journey, because you spend some time in the US, UK, Australia, returned to Europe in 2009, worked in Norway and then Austria.

Clive Spash : My primary concern for decades has been the environment and environmental problems. I did a fund raising campaign to "save the tiger" in 1972. At university I initially studied accountancy and business law, but switched to economics and specialised on environmental issues. At that time, there were few environmental economists, and in Europe only a handful.

I left Europe to specialise further. I started an economics masters at the University of British Columbia, but found the mainstream approach really unhelpful, unrealistic. I had already completed a dissertation on air pollution. In class I questioned the optimal pollution control models, and so on, and was basically told to shut-up. Professors didn't want to hear any criticism. I switched to resources management, an interdisciplinary masters, and studied water chemistry, air pollution, plant science, ecology, planning and economics.

After that, I felt I still needed a Ph.D. in economics to criticise with authority. My thinking back then was that there are plenty of people concerned about the environment, but economists don't take them seriously. You have to be an economist to be taken seriously by economists. I went to Wyoming University, but thought I might not complete. I mean a PhD done in the USA is a brainwashing exercise to

make you think in a very narrow way and to conform to the hegemonic discourse. Still, it worked out. I got very interested in philosophy and ethics while doing a thesis on climate change. This was the late 80s. My supervisor, Ralph d'Arge was actually the only economist around working on climate change and ethics.

I explored valuation and how people value, psychology and individual motivation. Economists have a black box here. There are plenty of black boxes in economics! I tried to open this one up and got into political science and institutions. By the 90s, I was back in Europe running research projects, with a range of different economists and philosophers (John O'Neill, Alan Holland) and others like Martin O'Connor. We were discussing around institutions and got into deliberation, participation, participatory approaches.

So, I travelled, specialised, and went through a range of different disciplines, and sought an overarching understanding, trying to bring all this together. That brought me to philosophy of science and how science can actually be integrated, coherent and meaningful. That's the journey, I guess.

OLIVIER PETIT : How did you discover the field of ecological economics, and what initially attracted you to this community of researchers?

Clive Spash : Interestingly, I didn't discover it. When I was doing my PhD, Ralph was contacted by people setting-up the International Society for Ecological Economics (ISEE). He'd been key to establishing environmental economics and editor of the *Journal of Environmental Economics and Management*. At that time, there was frustration that they hadn't achieved policy impact. The issue was, "Well, can we revive it? Can we get things going again?" It seemed stale, people weren't listening. A quite broad range of people were brought together in Washington D.C. for the first conference. Ralph and I had a plenary paper and both attended.

I was an environmental economist, trained in that tradition, and somewhat dubious about ecological economics. Still environmental economics was becoming increasingly problematic and failing its promise of the 60s. I was broadening my horizons and becoming very critical, especially of valuation approaches. The European Society of Ecological Economics (ESEE) started in 1996 with a meeting in France with Martin O'Connor being key to its establishment. One day, Martin phoned me up and asked if I wanted to stand for ESEE Vice President. I'd never even thought about doing such a thing, but stood and got elected.

OLIVIER PETIT : So, your first conference was in Washington DC, but were you already aware of the discussions about ecological economics, like the 1987 workshop organised by Joan Martínez-Alier in Barcelona?

Clive Spash : No, I wasn't involved in this. I was studying in the heartland of the environmental economics community. The Rocky Mountain area had attracted a lot of them: Tom Crocker, Ralph, David Brookshire, in New Mexico Ron Cummings and Colorado Kenneth Boulding, you had all these people. This was an established community and ecological economics appeared a blip on the screen for many of them. People like Georgescu-Roegen and Daly were pretty marginalised by that community; the former was effectively forgotten, and the latter pushed out so some didn't regard him as a real economist any longer. So, the early period, no, I was studying. I was doing very boring mathematical optimisation, macroeconomics,

microeconomics, number crunching and all that kind of stuff, and becoming an American mainstream economist, as they tried to make you.

OLIVIER PETIT : Having worked in US, UK, Australia and Austria, how do you see the way in which ecological economics has developed in these different countries?

Clive Spash : At the end of the 90s, I tried to summarise what I thought was going on. I worked with philosophers at Lancaster on the journal *Environmental Values* and was asked to write an article clarifying distinctions between environmental and ecological economics. Of course, if you look at the ISEE journal *Ecological Economics* it looks like the same stuff, which is one of my critiques. The philosopher Jeremy Roxby-Cox commented on my paper and that helped me clarify how creating ecological economics required more than simply joining economics and ecology; an approach strong in the USA that came to the UK encourage by people like Charles Perrings, later ISEE President, then at York. There was no integrated new interdisciplinary field of knowledge, just maintenance of a little bridge across two mono-disciplinary modelling approaches.

I could talk about other countries but what I observed is not country specific. My analysis developed to identify generalisable differences: some people committed to the neoclassical approach and others wanting integration. Add pragmatists and you get three groupings – new resource economists, social ecological economists, new environmental pragmatists – in any country.

PHILIPPE MÉRAL : Indeed. We would like to tackle the emergence of social ecological economics. Why did you decide to distinguish these three schools of thinking you just mentioned. Can you tell us a little bit more about that?

Clive Spash : It is actually based on my experience. Starting off with being in the ISEE and trying to work out what's going on, looking at the journal *Ecological Economics*, and the way people were approaching things and thinking about this. Why are they doing things like valuing the world's ecosystems in a way which has absolutely no scientific credibility at all? It's not something that environmental economists would ever have done, people like Tom Crocker, but then again, Ralph put his name on the paper [Costanza *et al.*, 1997]. So, I asked Ralph about this, and his position was totally pragmatic. The article was going to go into a big journal and would be highly cited. He knew all the flaws with contingent valuation, the issues around transferring numbers out of place and over aggregating, but he did it anyway. So, there's clearly an extreme pragmatic element in this. What you see is pragmatism being employed as a strategy, it's not a school or paradigm.

The three categories are like Georgescu Roegen's dialectics, not set in stone. It's the inter-lapping and overlapping areas that are most interesting. I think this is something that some people have misunderstood, because they're trained in what Georgescu-Roegen called arithmomorphism – everything is defined in terms of mathematically absolute and precise categories. You're either in one box or the other. Instead, the most interesting thing is what's in-between boxes, dialectical conceptualisation. So, I was thinking this through for some years, where people stood, where I stood, what was going on with the field of knowledge.

When I was ESEE Vice President and President we avoided creating divisions, aiming for unity. We brushed over a lot of issues: social issues as a big gap, criticism of capitalism missing. I mean, what is going on in economics? What is an economic

system about? When people use the term “the economy”, what they really mean is capitalism. They're not analysing any other type of economy. They're discussing the capitalist economy. Take Daly, he is discussing capitalism, but rarely explicitly so, until more recent challenges, asking: “Are you supporting capitalism?”

Since the 2008 crash questioning capitalism came back on the agenda. We had 20 years of domination by neoliberalism, alternatives weren't discussed, and left-wing, socialism, was pushed out. Of course, the Americans 1950's rhetoric and McCarthyism had removed the left there and branded anybody slightly socially concerned a communist. So, there's Cold War rhetoric around, which has been very problematic.

The social had to come back in. Economics and the economy involve the political, social, cultural. It's got all these different aspects to it – psychology, social psychology, sociology. You can't study an economy without them, you have to bring them in. This was the point of putting the social at the front end, it was absent, missing, not discussed or dealt with. You have to look outside of the mainstream to start to get a handle on this.

Social ecological economics came about while I was analysing and coming to a realisation of what was going on. I then thought, how does this stack up? So, I did some empirical research with Anthony Ryan, a social psychologist. We were interested in testing the hypothesised divisions. Do they actually exist? Am I the only social ecological economist that exists on the planet?

PHILIPPE MÉRAL : Pragmatism exists in the field of international aid too, as evident amongst economists from the international agencies like the World Bank or the big NGOs. Anyway, let's talk about the foundation of social ecological economics. Who are the main authors from your point of view?

Clive Spash : If we go back in history for foundations, there aren't many people who are working on the social ecological economic aspects. Joan Martínez-Alier has done a great job of looking at the history and Marco Vianna Franco is now doing so in Vienna. This highlights people working on energetics or natural sciences, and looking at what now falls under social metabolism. However, I would emphasise others.

Karl William Kapp is extremely important, I would say, he's really a pivotal person. His work is connected to critical institutionalism (not the captured mainstream new institutionalism), which is about power, power relationships, actors in society, norms, and structures. Kapp's book was written in the 40s, published in 1950 [Kapp, 1950]. This is long before ecological awareness arises. Another significant person is Siegfried von Ciriacy-Wantrup, who was Ralph's supervisor. He is quite critical of mainstream economics. A very practical person, concerned about farming, farm outreach and agricultural production. Those two are quite key in the early period.

By the 60s-70s, Georgescu-Roegen appears. He was a mathematical economist, embedded in the mainstream, before getting into entropy and changing his position. He comes up with lots of ideas in his book [Georgescu-Roegen, 1971] and becomes quite important for ecological economics. Then there is Daly, who was Georgescu-Roegen's student, or at least studied with him, about whom I'm more critical.

This is kind of a lineage of ideas. I think Kapp is actually totally underestimated. His idea of cost shifting is totally in contrast to what we have in terms of the externality theory of the mainstream, which belittles our environmental problems.

PHILIPPE MÉRAL : In your work, you often mentioned Karl Polanyi. Can you tell us why?

Clive Spash : Yes. Polanyi is also very interesting and I've done quite a bit of research on his ideas, although he isn't addressing the environment as such. He's concerned with capitalist society and the rise of the right-wing, and wrote *The Great Transformation* in the 40s. The allying of capital to the right, because if capital can't control the economy, then it can always go down the militarised extreme authoritarian route, as seen with Hitler, fascists in Spain and Italy. The alliance between capital and the extreme right is part of what Polanyi's analysis is picking-up on. He also covers economic history, different forms of markets and the role of money.

I'm quite critical of his approach on the economy though, while I like his "instituted process". He actually accepted the mainstream economic approach as valid for understanding capitalist economies. His criticism is that this misses-out understanding other types of economy, his "substantive economies", when looking back in history. I think he's wrong, he created a false dichotomy, because any economic process, any capitalism, has to have a social aspect, it has social relationships, there is the substantive economy within capitalism. It's not a division. It's not one or the other. I totally agree with his criticisms, the problems with commodification and other aspects of institutions and how they operate. However, the substantive economy shouldn't be split off as if something existing separately.

This actually leads me to redefining economics. I wouldn't accept the mainstream definition about choice and scarcity. If we move to the definition of economics as social provisioning, we can understand capitalism, primitive economies, hunter gatherer societies. We can understand a lot more about what are the relevant concerns.

PHILIPPE MÉRAL : My last question for this part concerns the distinction you made between ontological, epistemological and methodological foundations of ecological economics. Can you explain why did you decide to focus on these notions?

Clive Spash : Working on things like environmental values, I realised economics maintains a naive objectivism — observe, get some willingness-to-pay amount and you have a factual truth. There are claims about people having true preferences, but ask an economist what they mean by "true preferences", they have no answer at all. I've never had a straight answer to this question.

What then is the validity of their claims? What is their epistemology? In my undergraduate we had Blaug's book on economic methodology [Blaug, 1980]. He promotes Popperian falsification, but this was already discredited by the time he wrote his book. Even Popper gave up on pure falsification. What are the alternatives? There's more to philosophy of science than methods and methodology.

I discussed such issues with Rich Howarth and he suggested I write an article summarising my thoughts. Originally, I was looking at the "three camps" but ended-up with a very long introduction on the history and philosophy of science. It became two papers [Spash, 2012, 2013]. I also started teaching history and philosophy of science on the social ecological economics Master's in Vienna. In economics, there's

at best a focus on epistemology, often called methodology, but a failure to get to ontology which is left implicit. Critical realist philosophers call this the epistemic fallacy.

We want social ecological transformation of economies. That's the bottom line. We're in crises, we're in a social crisis, we're in an ecological crisis, we have economic crises. Understanding the reality of the situation is where ontology comes in. It's about structure and relationships. If we want to change things, we have to understand the causal mechanisms and need a realist explanation of what's going on. That means referring to the reality that is out there: multinational corporations, the industrial-military complex, resource change, social metabolism, energy and material flows. This reality is not understandable by converting it all into money. We have to get back to the basics. A major contribution from establishing ecological economics was to emphasise the biological, physical, material and energy and how this all feeds into our social provisioning systems.

OLIVIER PETIT : Let's talk about the risks of criticism and stigmatisation in the field of social ecological economics. Of course, colleagues working in the field of ecological economics sometimes react vigorously to the three categories you made. Isn't it dangerous or counterproductive to stigmatise the work of certain colleagues?

Clive Spash : I'm not stigmatising anybody. What I'm doing is critical social science research. That means being critical and reflecting upon what you're doing as an individual in your research and the way that you're putting forward ideas that your work produces. As I was saying, the three camps approach was a personal reflection on people who I knew, and their practices; hypothesising this and re-conceptualising what goes on with the society [ISEE], and then looking at it in concrete ways, doing empirical research, putting it forward and getting it discussed. Now, if people feel stigmatised by that, I think that says more about them than it says about what I'm doing, because it's how they regard themselves. What is their problem? That they aren't real social ecological economists? That isn't the point.

If we want to address our social ecological crisis, mainstream economics is unhelpful, and it's failed. Being pragmatic is unscientific and creates problems. American Pragmatism has a philosophical basis and I'm happy to argue about pragmatism. What does it mean? But people don't do that. They adopt naive pragmatism, as a strategy, and it's not philosophically well grounded.

I'm asking for people to justify their positions in economics. Why are they using unrealistic abstract mathematical models? Why do they avoid power and power relationships? Why ignore economic structure? Why are they embedded in institutions, which reproduce all the problems that we've been trying to get rid of? What I get frustrated about in economics is the unscientific approaches. That's what I'm trying to expose. We have 2500 years of Western history and philosophy of science, understanding how to gain knowledge, and what makes credible knowledge? Yet, 2500 years after Aristotle, people make the same mistakes. Now, if people get upset, when you point out to them that they are actually making false and baseless knowledge claims, that's fine. They should get upset because that's the problem, being unscientific, and that's my concern.

Of course, people will latch on to ideas as noted by Kuhnian paradigm theory. People want to socialise, create social groups, set-up social networks; they become dogmatic,

defend their social grouping against new information, and you get bounded rationality. If you want to get out of a hegemonic discourse, you have to break with the past, but people don't want to break with the past. They are trained as neoclassical economists, they become professors, they are aware of the problems, but they stick with it because they are socialised into that structure, and the incentives are there.

So, you know, what I really want is to have a scientific approach, not a pseudo-science and not a pragmatism that appeals to neoliberals. This leads to things like the useless Paris conference, which produced a document on climate change that doesn't even mention fossil fuels and doesn't address any of the fundamental mechanisms that cause climate change.

OLIVIER PETIT : One argument you've made is a very strong criticism of methodological pluralism, because, you claim, it will lead to the acceptance of just about anything and everything. Doesn't doing social ecological economics mean adopting a form of methodological pluralism, but limited to certain social science methods and concepts?

Clive Spash : The problem is what we mean by methodology. Its used in ways so overarching that it's almost meaningless. It's not addressing epistemology and ontology, which also need to be understood. If I take the critique by Goddard, Kallis and Norgaard of my work [Goddard *et al.*, 2019], they fail to establish what makes their own claims valid. Their methodological pluralism is flawed.

I think there's also a misunderstanding here, claiming that I think there's a single method or methodology, this is not the case, I've never said this. In actual fact, I say use any method that is suitable to your object of study, but it has to be suitable to the object of study. It's the old thing: some jobs need a screwdriver some a hammer, you don't always use a screwdriver. Basically, I'm totally open to methods, but observe what happens. Some people adopt single methods and apply them to everything, which is the mainstream position. Others are more pragmatist and just adopt whatever comes along, regardless of the object of study, because they want to prove a predetermined position. They're not doing science, they're not investigating the object of study, they're actually saying: "Oh, I have this very strong position. I'm an advocate of X; therefore, I'm going to prove X is valid, regardless of what the circumstances are, or whatever the issue might be".

I argue for ontological realism. Start by looking at the world and understanding both its bio-physical and social political aspects. There's an object of study and we want to get knowledge. Of course, we conceptualise and construct knowledge, but it's not construction of reality, it is construction of our understanding of reality. That is going to be relative to who you are, which time period you're living in, what knowledge basis you have, and so on. At that point, you've got epistemic relativity, but reality is still there. For example, reality didn't change because we moved from understanding of the world being flat to being round. Epistemic relativity is why you need criticism, to think about who you are and what you're doing. This is critical social science.

When you get to methods, choice is open but relative to your object of study and research question. I argue against undefined and confused pluralism. The idea that everything is equally valid, that all theories have something to say, they don't. They're not all equally valid. Mainstream economics is a failure to understand the

object of study. The world is not made up of *homo oeconomicus*. Human beings are not calculating machines. It's fallacious to claim economics is about choice, and then describe humans as having no choice but to maximise. That's a robot not a human being. So, you need to judge between theories.

OLIVIER PETIT : Precisely when you come back to the first writings with Norgaard in the 80s, about different worldviews, it's not that far from what you're claiming yourself. I have some difficulties to understand why you really disagree with his arguments.

Clive Spash :The original article justifies maintaining mainstream economics within ecological economics having already deconstructed it. This is totally contradictory. Why would you maintain an understanding that has no validity in your science? It doesn't make any sense. The only reason is because he says people believe in this. Well, people believe in God. Should we bring God into our science?

The problem I have with this approach is that he's stuck in an epistemic fallacy. When writing the response to my work [Goddard *et al.*, 2019], they never discuss ontology. They discuss epistemology and that's what they focus on. As a result they fail to address the fundamental issue I raise: we have to look at structure and mechanisms. You don't get to that from empiricism, a flat ontology. If you stay at the level of actualised events and the empirical, then you don't get behind things.

It's also fallacious, because studying the economy requires making claims about ontology and structure. For example, Dick created a whole thing about “economism”. I'm not quite sure why he uses this term, or why he doesn't just talk about capitalism and theories of capitalist structures and problems? Again, on what basis does he make his claims? Or, if you take something like coevolution, which he promotes, what is the foundation, what does it mean in terms of our understanding? Coevolution is a concept from biology. Now, I worry about transferring concepts like that, and trying to use it to explain the whole of human history or the economy and so on. I fear this ignores other ideas, which are about power and power structures, and fails to get to structure and discuss social institutions and the way that the economy is actually operating.

So, addressing ontology is extremely important, and not just epistemology. There are, of course, sympathies with Dick, and what he does, and so on, but I'm trying to get a better approach to the science. They also undercut themselves, because if you allow anything to be justified on any basis, then you basically make your own claims irrelevant. It's the old fallacy of relativism, that if it's all relative, then your opinion is relative as well: “I don't care about it, because it's relative to you, and mine to me”. The sad thing is that they end up justifying the mainstream and allowing the orthodoxy back in and then also justifying capitalism. So, you have people who are strongly opposed to capitalism, who end up with arguments that defeat their own ability to criticise capitalism or people's belief in it, because they're arguing that if people believe something, well, that's fine. It's just a convention in society.

OLIVIER PETIT : Some critical ecological economists find it difficult to claim to be social ecological economists, probably to avoid position imbalance and to go frontally and radically against approaches to ecological economics. How do you understand this attitude?

Clive Spash : Yes, of course, this is what I was saying about paradigms and groups and the way that people associate with each other. So, clearly, there's sociology of science and we're social beings. As a result, we socialise and create common

understandings, and then people avoid creating trouble in the social group. This can be highly problematic. For example, if you want to be an economist you're highly likely to be trained totally in the mainstream with no thinking outside the box. If you want people to think outside the box, and they start criticising the mainstream, they're going to have to break with their social group. If they're not prepared to do so, then they're going to get upset about people who say, you're hanging out with the wrong group. So, it's a psychological and sociological issue.

How do you create a paradigm shift? You know, that's what we're talking about. It's interesting and challenging, I was corresponding with Josh Farley about this a while back. I think we're in a paradigm shift. The problem is that it's unlike Kuhn's miraculous Gestalt jumps, it's a long process. Copernicus' heliocentrism took a couple of 100 years to get established: "does the Earth go around the Sun, or does the Sun go around the Earth?"; this is something everybody can observe. We're talking about ideas that nobody is even observing. We're asking everybody to shift ground in what, 5 or 10 years, no, or perhaps 30 years? Of course, people are going to be confused, upset, want to stay in their social groupings, or maintain their alliances, and so on. So, they're going to publish in the right journals with the right method, because the method is what's important in the mainstream, and the method is a dogmatic mathematical approach. They spend 10 years doing that, and you point out to them, that was all rubbish, and they shouldn't have been doing it. Well, of course, they get upset.

It's not good, critical social science, you have to be self-reflective. Ecological economics is a personal journey. It's about challenging yourself, it's about learning. If you're not prepared to challenge yourself and learn, then you're not an academic and you're not a scientist either, as far as I'm concerned, and that's what it's about, but that's also what life is about. It's a journey of understanding and challenging yourself and trying to do the right things along the way.

PHILIPPE MÉRAL : Let's start the fourth part of this interview. When ecological economics started, the objective was to create a bridge between economists and ecologists. In your recent writings, ecology seems to be considered as part of the new environmental pragmatism and not social ecological economics. Can you tell us how do you consider ecology in social ecological economics?

Clive Spash : My point about pragmatism with ecologists or conservation biologists was slightly different. It's not that the majority are like this, just pragmatists, but rather that they're disengaged from economic and social understanding, and that they are latching on to approaches and numbers and things for strategic reasons. This is new environmental pragmatism. I think that ecologists and conservation biologists who have adopted monetary valuation, natural capital approaches and so on, fail to realise they're not empowering but disempowering themselves. Their understanding as scientists is in totally different terms, the functioning and structure of ecosystems not economic services or monetary value of bees and so on. It's just political pragmatism, and bad pragmatism because it's actually not achieving what they want. They disempower their discourse, and buy into a capitalist neoliberal power structure, which actually ends up eradicating the species that they wanted to save in the first place. So, they're not even good pragmatists.

My point here is not classifying all ecologists, all conservation biologists in these camps or as pragmatists. When you look at the people who have been producing the

numbers, they are a minority in the society [ISEE], a very few quite powerful people who have done this, and who have pushed this heavily forward. There is also the linkage model approach: ecologists who are doing their ecology and then link it into the economic models. They're embedded in their own science, and then linking into the mainstream. I do think they're linking into a set of models which are unrealistic and actually won't help understand how we can protect and prevent ecosystems from being destroyed, but they don't have to be pragmatists.

OLIVIER PETIT : Thank you, but I'm not quite sure you have properly answered the question. What is the place of ecologists in social ecological economics?

Clive Spash : OK, I would say it's not just about ecologists. Why did the ISEE choose the term "Ecological Economics"? There were long discussions before the term "ecological" was adopted, but actually we're not focused on ecologists. If you look at Georgescu-Roegen's work, it's about energy and material flows. So, physicists could be important. Chemists could be important. It depends on what your particular problem is and what you're studying, what's the research question, what's the focus. It's not just about ecology.

Of course, ecosystems were a revolutionary and important development in conceptualisation of human interactions with the natural world. That's why ecology became big in the 70s, known as "the decade of ecology". It explained how pervasive pollution is spread around the globe and the dependency of humans on biophysical structure. Put DDT into the system and the species that gets knocked out is the one at the top of the food chain, and that's us. Such insights were why ecology became dominant in terms of connecting things.

It's partially a historical accident that ecological economics is even called "ecological". At the same time, it's not particularly a problem. What we do under this title is important, and that is connecting to the natural sciences that are relevant to your issue. If we're looking at climate change, may be meteorology, forestry or oceanography could be important. Where did the gases go? How are they cycled through the systems? It's not just the ecology or ecologists. We have to connect to other disciplines and be interdisciplinary.

Like Kapp we work on integration of the sciences, linking-up from the natural through to the economic and social sciences. When you're trying to do interdisciplinary work, who do you go to, which are the disciplines that are most relevant? If I'm dealing with recycling in the city and the failure to recycle enough, I don't necessarily need ecologists, I will go to the closest disciplines to my problem. If I'm looking at wildlife in an urban area, well, then I likely do need ecologists.

PHILIPPE MÉRAL : What is your opinion about political ecology?

Clive Spash : Political ecology is, of course, interesting with its focus on power and social relationships, exploitation, particularly the relationships of indigenous peoples to modern market structures and impact of economic interventions. There are obviously a lot of correspondences to the concerns that we have in social ecological economics, and there could be strong alliances. At the same time, I think we are more overarching and inclusive, addressing a wider range of issues.

There are also some problematic aspects, such as occurrences of flat ontology and strong constructionism. I argue for depth ontology and realism. There is a structure, there are material-energy flows, and biophysical systems. I disagree with the recently

popular idea of multiple ontologies and associated ontological relativity. Just because you have different perspectives doesn't mean multiple ontologies. For example, you can look at a human body, from many perspectives — chemistry, biological function, genetics — but it's still a human body. I think that's a mistake that goes on in political ecology sometimes.

An important aspect is acknowledging there's different knowledge coming from indigenous communities and the way that they live compared to Western society. People understand the world in their context, who they are, their culture and science. That's epistemic relativity, but we should avoid confusing different ways of understanding things with multiple ontologies. Neither do we accept or tolerate everything, as some claim we should. In practice, political ecologists don't believe that. They're concerned about capitalism, about getting rid of capitalism most of the time. They're not then accepting everything is equally valid. They believe that there's a very bad structure and that it's intervening and destroying people's lives. That's pretty realist.

PHILIPPE MÉRAL : What do you think about the degrowth movement and ecological macroeconomics? because we observe more and more publications on this topic.

Clive Spash : Well, it's interesting that you put those two together, because I wouldn't do that. Degrowth is not macroeconomics. They're two different things.

Daly's work is about macroeconomics, the macro-economy growing forever, that growth has no bounds, and you need an explicit scale constraint. So, this is not new. The crash in 2008 stimulated new interest in macroeconomics, because it was seen as failing, and more recently a younger generation is concerned about its failure to address the environment. Tim Jackson and Peter Victor's work has raised ecological macro up the scale. At the same time, Jamie Morgan notes this is embedded in conceptualisations that are mainstream [Morgan, 2017]. By choosing a macro model, you describe reality in a very particular way. So, ecological macro can result in misconceptualisations. It's continuously engaging with the mainstream on terms set by the mainstream, because it's conceptualising things in the mainstream way.

What we want from an understanding of the macroeconomic system is to understand capitalism, but we also want to get to a different system, which means we want a different type of macro economy and macroeconomics. Macroeconomics was designed and developed by Keynes to save capitalism from crisis in the 20s and 30s. Macroeconomics has always been about maintaining the growth economy. Using growth models to explain why the environment should be included concedes too much, like reducing nature to capital, a variable K_N to be stuck into a model. All you've done is corrupt the concept of nature and made it into a malleable thing that could be traded-off with other forms of capital. This is a failure, I'm afraid.

Degrowth is interesting because it shakes things up a bit for ecological economists. But, it's a social movement. It's not a theory or a model or a philosophy of science. It involves lots of different elements and different people coming together for different reasons. It makes people think, and think outside the box. For me, it's a really good term, because it's a challenge. There's a lot of people attacking degrowth, like Kate Raworth and her doughnut dismissing it in a couple of sentences in her book. Then bizarrely, you get degrowth people adopting the doughnut. What are they doing when they adopt the doughnut from a person who criticised degrowth, admits she's

agnostic about growth and actually appears pro-growth? You have a problem with degrowth in as far as it's lacking theory, which is actually why I think it's complementary to social ecological economics. The way I see social ecological economics is that it is the theory, we are providing the science.

Degrowth is a social movement and is pushing for activism on many levels. This is good. I support academic activism. We all need outlets for our activism, because of what our science tells us about what's wrong with the world. I see degrowth as being something that's quite important in terms of connecting social ecological economics into an activist community, but it's only one route, of course. There are other activist routes as well. They're compatible with degrowth and many people are involved across them.

The way that theory should feed in to degrowth is not as strong as I would like. I do dispute with people when they start latching on to things like doughnut economics or circular economies without actually having any understanding of their contents of failings or pseudo-scientific aspects. Degrowth activists don't need these things anyway and should stick with their basic understanding and avoid contradictions.

Degrowth is also much broader than macroeconomics in terms of its challenge to the way we live, and how we understand ourselves and what we're doing. There are very good things discussed about how we could live. We should be having debates about freedom in society, what it means and getting away from neoliberal freedom. Degrowth is challenging the concept of choice in the marketplace as being the dominant aspect of freedom [Windegger and Spash, 2022]. So, I think there are lots of good things around and coming out of association with degrowth, but it's not, and should not be seen as, a science or a scientific paradigm.

OLIVIER PETIT : The last part concerns the links between social ecological economics and heterodox economic theories which are important in France. What is your opinion?

Clive Spash : Social ecological economics brings forward power relationships and moves power and structure up the agenda. This links across heterodox schools. Eco-feminism and feminist economics have concerns for social structure, patriarchy and power relationships. Eco-socialism and neo-marxist ideas also relate to power. I was attending a session in honour of Daly who appeared quite anti-marxist and he was asked explicitly about this, and noted that Marxism contributed ideas of exploitation and power relationships. However, he never took the logic of that further or into his understanding of the marketplace, whereas power relationships are extremely important in terms of how prices get determined and markets operate.

I had high hopes for links with Post-keynesianism, but I'm perhaps more dubious about this now. They have a lot of interesting aspects in their ontology which link-up quite strongly with social ecological economics. However, the fixation of some on mathematical modelling is problematic. Keynes's ideas on uncertainty and the psychology of the marketplace do not fit into a mathematical model. They also have an economic growth fixation.

An important heterodox school is critical institutionalism which links to Kapp. The institutional aspect was strongly brought in to ecological economics by Arild Vatn. We also had Elinor Ostrom, of course, but I think she went down a problematic route adopting more mainstream approaches.

At the core of the heterodoxy is unity around ontology. What is understood by uncertainty as distinct from risk and probability. The importance of historical not abstract time as used by the mainstream. Irreversible change, that we live in evolving systems with emergent properties, and open systems. These kinds of aspects of ontology are really unifying across the heterodoxy, and even into the neo-austrians, who I dislike because of their ideological commitment to capitalism. I also reject their unrealistic theories about how society operates and the ideological promotion of entrepreneurs — as if this could justify Elon Musk with his billions. Despite their theories being flawed there are aspects of ontology held in common with the heterodoxy.

OLIVIER PETIT : Thank you, Clive. It's time to finish this discussion. Do you want to conclude?

Clive Spash : Briefly. We are facing the need for social ecological transformation. I think everybody recognises this, even the mainstream capitalists know they can't continue the way they're going. Transformation is on the agenda, but to what? That's the big issue. What sort of society are we going to have? If we go down the route of capitalism the threat is a top-down militarised society, and a lot of division with more people trying to get to the richer places or get away from the ecological crisis and so on. This is not the way to go.

Social ecological economics is actually about how we design an alternative society, or rather alternative societies, because it's not singular, but how we can have multiple types of social provisioning systems culturally relative to different people. It's important to get away from the idea that there is a single economy and it's going to be overarching. This is something that people tend to forget, there isn't just one economy. The Zapatistas have their type of economy, Indian farmers have theirs and people in different parts of the world struggle for their own economies against development, colonialism, and imposition of neoliberal capitalist systems.

So, it's alternative economies. Social ecological economics is about studying these, the valid alternatives, how they operate, what are the good points, why existing alternatives to capitalism should be maintained, the empowerment they give to people and the values that they hold and their relationships to nature. I also think we need to have experimentation in Western society. Governments should be funding alternative communities, they should be funding eco-villages, transition towns and in-kind economies, as experimental approaches, to get things on a different basis. It's the classic thing, put all your eggs in one basket, and when the basket gets dropped, all the eggs are broken.

OLIVIER PETIT : Thank you. It's particularly important what you just said, because the interview will be published in a journal dedicated to the importance of territories.

Clive Spash : Thanks for interviewing me.

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Keywords: black box, institutions, participation, critical approaches, interdisciplinarity, categories, transformation, ontology, power relationships, heterodoxy

Mots-clés: boîte noire, institutions, participation, approches critiques, interdisciplinarité, catégories, transformation, ontologie, relations de pouvoir, hétérodoxie

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