

Disentangling Capital's Web Review round table

Participants: Ted Benton, Kathryn Dean, Pat Devine, Jane Hindley, Richard Kuper, Gordon Peters, Graham Sharp and Judith Watson, with additional contribution by Peter Dickens
Jason W. Moore. 2015. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London: Verso. Paperback, 336 pages, ISBN: 9781781689028. Ebook, ISBN: 9781781689042. Hardback, 336 pages. ISBN: 9781781689011.

Introduction

By Judith Watson

This review round table was held at a meeting of the Red Green Study Group in London in November 2015, at the Mayday Rooms in Fleet Street. We have often had discussions about particular books, and recently, these have led to members of the group submitting reviews to the journal.

As a study group, we have been going for quite a long time. The group in 1995 published a booklet *What On Earth Is To Be Done?* which was a major stimulus at the time to dialogue between socialists and greens. More than 20 years on, with ecosocialism recognised as a current in its own right, and not a difficult marriage of two currents, many of us are now working on a book of the same title. Many have joined over the years. We act as a London editorial board for *Capitalism Nature Socialism*. All those who participated in November know each other quite well, and this may have contributed to the atmosphere of the discussion. From the recording I have transcribed it and edited it a little for flow – removed ums and ahs - but have tried to retain the conversational nature of the discussion.

The people who were present and participating were as follows:

Ted Benton, professor emeritus of Sociology at the University of Essex, UK, and author of several naturalist works, as well as those political ecology and Marxism, author of *Alfred Russel Wallace: Explorer, Evolutionist, Public Intellectual. A Thinker for Our Own Times?* Siri Scientific Press.

Kathryn Dean, retired from teaching political economy at SOAS, University of London, author of *Capitalism, Citizenship and the Arts of Thinking: A Marxian-Aristotelian Linguistic Account*, London, Routledge. Forthcoming in 2016, “Computers and the alienation of thinking: From Deep Blue to the Googlemobile”, in *Changing Nature, Changing Ourselves*, ed. James Ormrod, Palgrave MacMillan.

Pat Devine, retired from teaching economics at the University of Manchester, co-editor with Andrew Pearmain and David Purdy of the 2009 *Feelbad Britain: How to Make it Better*, Lawrence & Wishart.

Jane Hindley, senior lecturer in sociology at the University of Essex.

Richard Kuper, retired from University of Hertfordshire, sometime organic farmer, writer on European agricultural politics.

Gordon Peters, formerly a senior leader in a social care role in London government, Green Party of England and Wales candidate in the 2015 parliamentary elections.

Graham Sharp, recently retired from teaching sociology at the University of Brighton, and is author of “Metabolic Rift Theory and the Crisis of our Foodways” in *Changing Nature, Changing Ourselves*, ed. James Ormrod, Palgrave MacMillan. 2016.

And me, Judith Watson, senior lecturer in geography at the University of Brighton, research interests in the geography of education.

Peter Dickens was unable to come to this meeting in London for health reasons. He circulated his written review in advance and it was read out during the meeting.

This round table, and how it turns out when written down, has led me to some personal reflections about the purpose of reviews. As I took over the reviews function for *Capitalism*

Nature Socialism I was happy to agree to the suggestion, originally Joel Kovel's, that we include film reviews and this has resulted in a number, including Peter Dickens' essay on *The Martian* in this edition. As a general principle, it would be good to see further opening up of both what is reviewed and how. I, like many people, and I suppose many women in particular, have a horror of Marxist more-orthodox-than-thou positioning. And academic point-scoring is even worse. We are treating the publication of Jason W. Moore's book as a major event in ecosocialist thought, worthy of extended discussion. Similarly, we published two reviews of Naomi Klein's *This Changes Everything*, neither of them wholly positive. A model in this case was the Book Review Symposium on Geoff Mann's 2013 *Dissassembly Required* in Volume 26 issue 6 of *Capitalism Nature Socialism*, from a meeting in Vancouver organised by Joel Wainright. That was in the end readable as a more positive review. In this round table, the sense of feeling our way towards a critique may easily be read; we make points tentatively, and contradict each other. The result is also more critical in the negative sense than might have been the case if any of us had reviewed the book individually, and the criticisms appear to be multiplied, although there are certainly places where some of the many valuable contributions of the book are noted. The tone may also have been inflected by the fact that the participants were aware that Jason had agreed to respond to the round table.

Pointing out where you honestly believe that a line of reasoning is insufficiently convincing is not the same as attacking an individual or their scholarship. That distinction, fundamental to the practice of critique, is getting harder to maintain in the neo-liberal academy, where academic jobs increasingly depend on crude counts of the numbers of articles and books published in "respectable" outlets only, their reception, their "impact", and even their sales figures.

Given such a climate it may be useful to remember the overarching aim of a review of a book or other media in a journal. That is, I believe, to guide readers towards resources that they will find useful. In the round table, none of us makes the point that I would like to make now: that *Capitalism in the Web of Life* is a book that should be bought, read, and put on student reading lists in disciplines including History, Sociology, Geography, Environmental Science, Ecology and many others, right across the boundary between the social and the natural sciences.

Capitalism in the Web of Life has the distinction of introducing some difficult ideas that will be discussed for some time to come. The original idea was that Jason would reply to criticism in the same edition, but this has been impossible to organise because of publishing schedules.

However, if all goes well, we will publish an interview between Jason and myself in the September edition of the journal. We are all extremely grateful to Jason for this agreement to engage in dialogue and are sure that it will, in the end, result in a deeper understanding all round of how humans engage with each other and with the non-human nature on which we depend. There remain many questions raised by the book that I think readers of the journal would like to know more about. Many of these debates are likely to continue among students and activists as well as scholars. It would be good to publish some more reflections on Moore's contribution here, on his other works, as well as on books with conflicting or complementary missions. Please get in touch with the journal if you would like to join in the debate.

Round table: Introduction

Graham Sharp introduced the discussion.

Graham Sharp: I've got eight points to make.

The first one is to do with Verso as a publisher, and it's their referencing system. Alongside this book I've been reading Robin Blackburn's book on slavery. It's also by Verso and has the same referencing system. I have no problem with that because the referencing is more comprehensive. Moore's on the other hand is very sparse and in some places actually inaccurate. It's probably nothing to do with Moore at all, but on page 10 there's a reference to the *Grundrisse*, the Penguin edition that we probably all have at home. He talked about the annihilation of space. It's on a

completely different page, page 524, in a much later chapter, where Marx talks about the annihilation of space by time.

Second, what runs very strongly throughout the book – he keeps going back to it - is the idea about Cartesian dualism and this separation of Nature and Society. I'm not convinced by this. He seems to be arguing that the Green Left - whoever the Green Left are, whether just in Europe and North America he doesn't make clear - is suffering from this dualism. But in the last 20 years or so most progressive green-minded people, certainly in this country, feel that humans are very much part of nature. We might have certain attributes that separate us from other species, like language, but even there I'm not sure. I saw a remarkable thing in France, cranes migrating to North Africa, the formation and the cackling they're making, there's obviously some kind of communication going on. So we have to be a bit careful about human language making us somehow unique.

What I do find convincing, and maybe he doesn't make enough of it, is that capitalism works *through* rather than *on* nature. That's a really useful way of looking at capitalism from an eco-Marxist or eco-socialist perspective. For me it actually changes the whole nature of what Marxism is about. It enriches it, I think. Elsewhere he states "Historical capitalism does not create ecological crises so much as it has been created through them". He's saying the same thing but in a different way. He doesn't actually say that in the book but he says it in an article of 2011 in the *Journal of Peasant Studies*. I've read most of the articles on his website and found them easier to comprehend than I did the book. This is what he refers to, as I understand it, as the double internality.

And then he hangs on to this, and makes it quite central, in the idea of the *oikeios*. The first thing that came to my mind when I came across the term is the root of the word economics. It's about how you allocate scarce resources. It should really be *oikeios topos*, favourable place. In other words, nature as if people were part of it. Now, what annoys me in a sense is that he's posing that as something new, as if he is the first to have devised it. There were some seminal articles about it in the 1980s, by Catton and Dunlap for example. They were agricultural sociologists who started critiquing this human exceptionalist perspective, challenging the notion that humans are quite separate from the rest of nature, and they tried to overcome that kind of division.

The fourth point I would like to make is that I tried to create a list of terms he uses in the book. The terms are not necessarily new in themselves but he uses them in a new context. I would like to focus on a couple.

One is the idea of commodity frontier. He's substituting it for words like colonialism and imperialism, and I'm not quite sure why. This is an example of where he's introducing new terminology in perhaps an unnecessary way. The other is the Four Cheaps and I want to look at two of them. One is labour power. He alludes in places to the domestic labour debate of the 70s and early 80s, particularly among feminist writers, and just a little bit to slavery. In his analysis of the domestic labour debate, he doesn't really say how it fits in. I understand what he's trying to say, that the reproduction of social relations of production is through the household, through families, through biological reproduction and so on, and women tend historically to bear the brunt of that, and they don't get paid for it. He could have said a bit more about slavery: I'm very conscious about slavery because I've been reading Robin Blackburn's book, and how it feeds into aspects of capitalism. So that's labour, one of the Four Cheaps. The other thing that puzzles me – and it's not really a Marxist concept, but I think it's connected with O'Connor's concept of the second contradiction of capital – is that he never mentions external costs or externalities. It's a very basic economic term. Capital offloads its waste, pollution and so on somewhere where it doesn't have to pay the full costs of clearing up the mess. Another of the

Four Cheaps is food. Food's an easy one, because there's so much happening in relation to food around the world. His Chapter 10 discusses this but there's no link made between cheap food and cheap energy. A lot of mass-produced food and modern farming techniques rely heavily on oil and other artificial inputs into the production process. I would have thought it was obvious that you would have to go into that.

The fifth point I would like to make is the concept of the Capitalocene as an alternative or antidote to the Anthropocene. The idea of the Anthropocene came in around 2000 when Paul Crutzen, an atmospheric chemist and Eugene Stoermer, a biologist started talking about different stages in the planet's history. They came to a conclusion, which was not universal by any means, that it started around the middle of the 18th century with the invention of the steam engine. Other people say no, no, it started with the Neolithic Revolution when we started moving away from hunting and gathering to farming. Others, no it's before then, when humans first appeared on the earth. So it's a highly contested concept. The important thing, and maybe he doesn't bring this out enough, is that the Capitalocene gets round all those debates that could be masking what's really going on. He talks about the Capitalocene existing for about 500 years, since roughly the 16th century. We could quibble about whether it's the 15th or the 14th, but it's when capitalism started to emerge, particularly in the countryside, particularly in agriculture. For Moore, the Capitalocene is understood as "a world ecology joining the accumulation of capital, the pursuit of power, and the co-production of nature in dialectical unity". That's from a *Journal of Peasant Studies* article in 2014, not from the book. An important point there is that you have to look at the mode of production. It's a much more accurate, much more useful way of looking at ecological problems. Capitalism as a mode of production from round about the 16th century.

The sixth point is that he then goes on to list 27 developments in early capitalism, in other words before the Industrial Revolution. One of his arguments – and it's one worth making, I think – is that there were all sorts of innovations in the forces of production taking place from about the 16th century onwards. Some may be stretching the point, for example coal, which was dug out of the ground, or collected from beaches since Roman times. But it was on a much smaller scale, because coal is bulky, it's difficult to transport over distances. In these 27 examples, and elsewhere in the book, he has a heavy reliance on orthodox economic history. I did economic history as a Minor when I was an undergraduate and I remember that us students and some of the more Marxist-orientated lecturers made a distinction between orthodox, right-wing economic history, and Marxist economic history. And he seems to be reliant on writers like Matthias. Matthias was the kind of book you didn't take out of the library, because it was bourgeois economic history, obsessed with how much pig iron was imported into the country. He's not making a distinction between different kinds of economic history, he's lumping them all in together. But some of his 27 examples are more plausible. One good example is the development of the printing press. That's an example of where it had quite an impact on mass literacy, on ideas, ideology being much more accessible to wider groups of people.

The seventh point is about Chapter 10, the long green revolution. And I think this is probably the clearest and least contentious chapter in the book, but what annoys me also is that he's presenting these alternative food production systems as if he was the first person to discover them. And there's a vast literature, certainly in America, about alternative food systems and alternative foodways: co-ops, La Via Campesina, Transition Towns and so on. He gives the impression that it's him who's thought all these ideas up and he's put them together for the first time. Interestingly, on page 288 in that chapter he starts to talk about interstitial politics and refiguration. Although he doesn't use those terms, that's what he's getting at. He's getting very close to people like John Holloway and Gibson-Graham although he doesn't refer to them. John Holloway, although I don't agree with him, talks about the revolution being all around us, in

other words you don't have to do anything, you just sit there and it's going to happen, which is absurd.

Moore gives a quote from someone called R. Solnit, talking about prefiguration. He could have teased that out a bit more, because what he's arguing in this chapter is that these are the ways forward. But he's homed in on a very soft easy target, i.e. food, that's much more amenable to do things with than, say, trying to take over a factory, taking over local government, or whatever. So my eighth point is what to conclude about the book. I don't really know what to make of it. I was hoping for better. Because I'd read most of his articles and found really good stuff. It was like what you said, Richard (Kuper) – is this really fantastic, or is it just vacuous? There's some good bits in it. I think he does a disservice by having a go at J B Foster. He's taking every opportunity to have a go at his ideas about metabolic rift and so on. He may have some points about whether it should be called a shift rather than a rift but he doesn't make it that clear, I don't think. So I've got mixed feelings about it.

Discussion

Ted Benton: Can I just ask, what is his critique of the idea of metabolic rift?

Graham Sharp: Well, as I understand it, it's dualist. Anything he doesn't agree with is dualist, all the way through the book. Cartesian dualism. And I think he thinks that you have this metabolic relationship between us as humans and the rest of nature. And somehow or other he thinks, no, we should all be part of the same thing. Therefore he calls it a shift, rather than a rift.

Pat Devine: My understanding was that he's assuming that a rift is a complete severance whereas Jason Moore's argument is that the interconnected relationship shifts.

Richard Kuper: If you have a rift, it's dualist.

Ted Benton: That was my worry about the introductory chapter. Although there's one place in brackets where he says that he doesn't deny that there was such a thing as nature existing before there were humans, there seems to be very little acknowledgement that there is any such thing as natural mechanisms, natural substances, processes, causal mechanisms and so on that exist independently of their binding together with human economic practices. And that notion of this dual internality seems to rule out the very thing that John Bellamy Foster is actually talking about with the concept of metabolic rift. There are metabolic processes which unintentional, and possibly unforeseen, human social practices actually disrupt. It's something we can have causal effects on, like climate change itself, but it's not something we can intentionally produce or incorporate into social practice without residue. There are places where that idea is half present but this notion of a dual internality seems to me to push that to the margins of thinking whereas it has to be absolutely central if we're going to understand the ecological crisis.

Graham Sharp: He accuses Foster, and he accuses Marx to a certain extent, although he's praising of Marx, of only using the metabolic rift in a very narrow way, relating to the town-country split in the 19th century, and the problem of soil fertility in agriculture. That's not strictly true with Foster because Foster and his co-author...

Ted Benton: He talks about the nitrogen cycle, the carbon cycle, and so on, so it's all of those things.

Graham Sharp: And he also talks about a rift appearing in about 1945 in the division of agricultural labour between livestock and crops, and you start seeing that rift appearing there, and cattle being put into these awful factory lots in America, where they're just like machines.

Richard Kuper: Not only in America. In China, Argentina, Britain.

Judith Watson: There are very interesting questions around that. Salvatore Engel-di Mauro has written a book about soil science in which he has a go at the concept of metabolic rift, because - he's thinking about JBF [John Bellamy Foster] and Marx - he says "don't make Marx into what he could never be, i.e. a soil scientist", which I think is fair enough. I don't think Salvatore does enough justice to Marx. But what he does say that's very important is that there's a whole load of things going on in the soil that would be going on without humans. There's nature before humans. So humans are part of nature but also there's nature that doesn't include humans. Nature is much bigger than just humans.

Ted Benton: It's that asymmetry, that persistent externality of large aspects of the whole complex that you can use the word nature to refer to, that you have to have in your metaphysics if you're going to understand how ecological crisis occurs. I think - there's a slight twist on it - but there is a "production of nature" concept there that seems to me deeply flawed.

Kathryn Dean: Well there's the idea there that everything is historical, and that could be easily interpreted in postmodernist terms. It seems to me there's enough in there, if you're going to read him charitably, to suggest no, there are real powers. Non-human natures have real powers, and this is why he says that genetic modification of organisms won't solve capitalism's problems now because these organisms are fighting back.

Graham Sharp: Engels - nature's revenge.

Kathryn Dean: So if you read him charitably, he's not writing about history in a postmodernist sense, he's writing about it in a realist sense, and he's saying that ways of seeing the world are an absolutely essential part of how we need to understand how we got where we are and how we can get beyond it. That's why he wants to bring in science and the symbolic, as he puts it. This whole way of picturing the world, which was made possible through cartography. And that of course became effective in the world precisely through printing and the fact that things could be written down and they could be mass-produced quite quickly. That's why he's saying - and I'm completely persuaded by it - it was a really important aspect of what happened in the long 16th century. He relates it to notions of empire and colonialism and so forth. I don't know whether that's normally taken into account, and that's why I was asking for guidance here, because I don't know a lot of the literature that he's referring to. Whether that is an original contribution or not is what I don't know.

Ted Benton: If he's saying for example that what existing GM applications in agriculture do is just produce a response on the part of host organisms, that develop immunity, that's not something that needs a shift of conceptual frame, it's something that's common sense and perfectly understandable, and it's talked about all the time, so I can't see what's new there.

Kathryn Dean: Well one of the things that happened in the long 16th century is what you see with Francis Bacon, that nature becomes a tool for humans. Humans are realising God's will through Nature with a capital N. And Nature becomes reduced to matter, a la Descartes. And it puts us outside nature in a way that allows us to act upon nature. Now he is saying that happened through a certain kind of framing - he doesn't use the word framing - but we picture the world in a certain way. So I think we need to remind ourselves that it wasn't taken for granted in the past that natures can act back, react and so on. It began to be thinkable in the 19th century with Darwinism. I think he's got a serious point, that we should take the long view to understand why we are where we are now.

Jane Hindley: My sense is that his concept of humans in the web of life is useful. The problem is the popular way of separating society and nature. The book has a really valuable aim that it's trying to shift that binary. So, if you come back to climate change, the popular understanding is

that this affects nature and to act on it is to protect nature rather than humans being imbricated in it and this acting on the ecosystem as a whole. But I'm not convinced that his solution solves the problem.

Kathryn Dean: But has he got a solution? Or is he saying this is something we need to find a solution to?

Jane Hindley: He differentiates between that and the need to have a different method. Philosophically we know we're in nature but methodologically we don't approach the history or the understanding of the world in that way. So it's precisely this point about this point about talking about external costs. He wants to get away from us seeing it as an external cost. It's not just a matter of resource sinks and resource traps. He's trying to get us to a place where we see that it is systematically all connected,

Kathryn Dean: I wanted to take up that point. He talks about things that we normally talk about as externalities as appropriation. He wants to say "capitalism's absolutely dependent upon cheap – well, free – nature". Exploitation is the capitalised bits of nature and appropriation is the uncapitalised bits.

Jane Hindley; And one of the reasons for not using standard terms like colonialism is that it diverts us from thinking that this is a kind of systemic dynamic. We think that colonialism is something that happens in expanding phases over there but it doesn't link back to expropriation and exploitation happening here. They stop us from seeing that it's all connected.

Graham Sharp: You're saying his terminology is an improvement?

Jane Hindley: I'm not saying it's an improvement. It's not that he's not talking about colonialism. He wants to conceptualise it differently. It's a real attempt to think in a different way. I think he's trying to do something very serious.

Gordon Peters: It's a new development of Marx, a new formulation. Helps us towards a new insight.

Richard Kuper: The concept is the web of life – it is the title of the book, after all. It is this matrix out of which everything emerges. But whether it helps you in discussing what's emerged is what I'm oscillating about, because by and large you end up using the same terminology, the same instances. What he does very well is to show that every bit of development needs to look at the relationship between what people are doing and nature, little n. You're using nature all the time in your discussion, but it isn't Nature with a capital N, it isn't reified nature. He isn't saying you should avoid using nature at all costs. So in the end I don't feel it works, but I do feel he's doing something, to say don't start off with this split, to say there are two separate things. But then how many of us do?

Kathryn Dean: He also says these violent abstractions are instituted, that nature over there is the piece of meat wrapped up in clingfilm in the supermarket. A lot of people every day don't think of nature as someone that we're within. It's been reduced to a commodity.

Ted Benton: But is he arguing with these commonsense ways of thinking about nature or is he engaging with existing theorists in human geography or ecomarxism? The question then is, is this something that's going beyond, and is it an improvement on the existing literature. Given that we're thinking about the idea that what we do is conditioned upon mechanisms in nature that are pre-given and so on, well that's there in O'Connor, very well articulated, but he doesn't cite O'Connor, or anyone that isn't American. I haven't heard any insights yet into the general theory that weren't already there. Although like some other people here, his Four Cheaps article I found extremely impressive.

Judith Watson: It's interesting to see what it's saying discipline-wise. One thing dear to his heart, which he doesn't make explicit, is a unification of economic and environmental histories. Which I think is why Graham's asking why he's taking bits from economic history, whichever authors are around, rather than engaging with the best insights of recent economic history. It would be very difficult to imagine environmental history that really fell for Cartesian dualism. There are authors there he doesn't cite or engage with much, those who say the Anthropocene started when humans first started farming or before. In the Sussex Politics of Nature reading group we completely pulled to pieces completely the *Ecomodernist Manifesto*. There's a breathtaking statement in there, that everyone agreed was racist, about the Native Americans wiping out all the large mammals on the continent, completely unreferenced. So there's a lot to be said about environmental history: which bits you would follow, and which bits are useful. Not necessarily about this high theory but issues that are already there for debate, and some of them need evidence adducing, to work out what's actually happened. How much evidence is there for what he's saying about the Capitalocene? And if the evidence isn't strong, does it matter?

Jane Hindley: Calling it the Capitalocene means that it this is not about an undifferentiated progress of humanity. It's quite a different thing from the Anthropocene.

Graham Sharp: He does say it's an ugly word.

Judith Watson: But everyone at the Sussex group said: "Wow, this is an interesting term".

Richard Kuper: The Anthropocene can be an interesting term. Some people have dated it from 6th July 1945, the date of the first atomic bomb test, saying that's when this historical transformation took place. The truth is, the Anthropocene is making the wrong division. Because whenever you place it, you have to use this dualistic language, you're trying to date a change in the relationship between humanity and nature. We're all agreeing that there are relationships and they change at many points over time. Just to have this one fundamental one, the Anthropocene, doesn't seem to be helpful because that says that humankind's interactions beforehand didn't have real effects whereas now they do, wherever you place it: 14th, 15th centuries or 1945. So the Capitalocene is OK, it's saying that there's an epoch in which capitalism is influencing humans' relationship with nature in new ways. It's as simple as that.

Graham Sharp: I disagree with Judith on this. I think the Capitalocene is a useful concept but the 27 examples he gives, some of them are on very shaky ground.

Judith Watson: No, no, I agree with you. I think that the Capitalocene is one of the more interesting terms he has. And I haven't thought enough about the web of life, that's useful too. I can't get my head around the Four Cheaps. I keep thinking cheap compared to what? Cheap is a concept within capitalism.

Kathryn Dean: That's his point. And they're related to one another. It's about a totality of relations and what is required to reproduce labour power in a way which enables capital to get surplus value.

Judith Watson: I started grouping the 27 transformations of land and labour. The ones I picked out were the ones that said something about the loss of woodland in Europe. There was one in the online essay, that he split into two for the book, because it would have been an even more difficult argument to sustain. It seemed to be so far away from what I've read in the environmental and economic history of England in particular that I thought I could start with that and see where it got me. I started looking up the people he was referring to and some other authors that were behind them, and I found that there has been an entrenched narrative. I found it in the standard history of coal from the 19th century. It said that all the forest - all the woodland to be precise - had gone from England, even more so from Ireland, so they then had to turn to coal. And then, according to the narrative that Moore builds up, they had to turn to

exploiting other countries, so timber became a commodity frontier. It also becomes quite a complex commodity frontier because one because you have to link it to coal. Then he links it also to iron production. So he says that complete forest ecologies were transformed in Central Europe because of mining. So I was thinking: how? A minehead does not take up a lot of land. It must be the argument that a lot of the woods were consumed in order to feed blast furnaces. And that's taken issue with in a work that's considered more or less authoritative, by Oliver Rackham, who made a lifelong study of this stuff. And he works very hard to demolish the writers of the time, who other people had taken for granted. But Rackham, without being a socialist, is not particularly impressed, because these people were improvers. They were thinking of their own self-interest. So when they wrote that the price of wood had gone up, they meant "too much for me". And when they said the woods were not being maintained properly, they meant "not in the way that I would like to see them maintained". People like Locke, who justified the despoliation of North America, and John Evelyn, who wrote about forestry in England. They were looking with an entrepreneur's eye. How would I make money from this woodland. Because only people who were making money out of it deserved to have anything to do with it.

Kathryn Dean: Presumably timber is important partly because of shipbuilding? And this long 16th century voyages of so-called discovery. And presumably a lot of timber would be used up for those purposes.

Judith Watson: Rackham goes into that in great detail. Much of what was grown in England woodland was coppice-and-standards. So you allow some of the oaks to grow tall and they can be felled for housing, which was also a great user of timber, and for shipbuilding. And the coppice is cut every ten or twenty years for poles, for charcoal, for making chairs, for other uses. Writers at the time certainly thought that a lot was being taken for shipbuilding.

Kathryn Dean: But the ships were built.

Judith Watson: Oaks were felled and the ships were built, and houses were built.

Ted Benton: But the oaks regrew.

Kathryn Dean: But very slowly. It was a huge thing in Ireland because from Elizabethan times Ireland was deforested. That was in the history books but it's also accepted.

Richard Kuper: I think that the use of timber in mining would be for pit props. I know in South Africa it's a major consumer of timber. I suspect much more was used in mining that you allow for. Even so, I think the general argument Rackham makes is correct. He says "name one forest that disappeared". That's his challenge in England. Maybe not in Ireland.

Judith Watson: Moore's source for Ireland is very out of date, so I'd like to look for more recent scholarship. Ireland has questions about fuel, about peat. Which leads to something else: the idea that the whole of the Netherlands was destroyed for peat. There is some argument for large-scale devastation of landscapes in the Netherlands. But it's not true to say that the Netherlands had no wood. It does now and it did then. Even when forest is cleared, as in the Weald of Kent, you end up with a landscape that's well wooded.

Gordon Peters: I think that the distinction between woodland and forest is not only linguistic. One third of the Scottish Highlands was denuded of trees, to be called "deer forest". So it's quite an important distinction.

Richard Kuper: In terms of his thesis, he doesn't need the woodland to disappear. He just needs the wood to become less cheap, so that you have to go further afield to get to the cheap raw materials. So nothing important seems to hinge on the argument about whether Britain was

denuded of forest or not. You went to Scandinavia because it was cheap. You went to North America presumably because it was cheap. And if you're talking about the Four Cheaps, go to where the material is cheapest.

Kathryn Dean: Some of these interpretations are a bit uncharitable. But it is repetitive. He really needed a rigorous, relentless editor to go through this and excise all sorts of stuff. I was surprised by the idea that cheap food hasn't been an issue for capitalism. The Corn Laws in the 18th century were precisely about having cheap bread for workers. And of course as we know, food has been subsidised up to now. So I'm more sympathetic towards what he's trying to do. I don't think it matters if all the forests were eliminated or not. I think he's onto something important, but I'm handicapped by the fact that I'm not steeped in the literature, so I can't judge whether he makes a fresh contribution.

Pat Devine: My attempt to sum up his argument is that he's arguing that accumulation is shaped by nature, where nature is human and extra-human. I thought that this might come back to points you have made, Ted, about re-emphasising use value, and how use value determines what can be done by any form of production, given the availability of techniques and non-human resources. I thought what he was trying to do was to say that there aren't these pre-human metabolisms but that the environment, or nature as we see it, is created through capital accumulation. But also, as I think we'd all agree, that the form of accumulation is shaped by the possibilities that non-human nature affords it, which might be a new slant on things. If you want to make sense of his obsession with non-Cartesianism, that's the best I can do. When he's talking about labour power and the work or the energy that it does he also seems to emphasise the energy of the work done by non-human metabolic processes. That's why he can talk about energy and work being this two-pronged human and extra-human nature. I'd like some clarification as to what he means by "world ecology". All I could make of it was that the process of capital accumulation, from the beginning of capitalism, has global impact. We talked about the way he doesn't refer to colonialism and imperialism, but this is another way of saying that global processes of capital accumulation come from everywhere.

Kathryn Dean: It's world systems theory.

Judith Watson: He's using Wallerstein a lot. Wallerstein acknowledges him as having shown how much he, Wallerstein, took account of what he was saying about the environment.

Pat Devine: Is that what world ecology is?

Judith Watson: I think so. It's a version of world system.

Ted Benton: Yes, he has very favourable comments by Wallerstein. But world systems theory was moving anyway towards a more ecosocialist approach. World systems theory has an approach, not just of a global economic system, but also of a nation state system. And I'm not sure how – this is a very crude point to make – there is a robust theory of ecological-economic systems, not just property systems but also socio-cultural divisions, political divisions, and class divisions. From my own personal history, an Althusserian Marxism onwards, we had to get away from that exclusive focus on modes of production and class relations at points of production. I'm not sure whether there's any robust analysis of non-economic/ecological relations in his account.

Graham Sharp: One of the things Moore was saying in one of his earlier publications, and a rare point where he thought J B Foster had done a real service, was in his little book *The Vulnerable Planet*, a very accessible book. He really agreed with Foster that before capitalism the ecological damage was localised, and he makes that argument that when capitalism arrived it was global. An example would be Mesopotamia. Another would be the Roman Empire.

Judith Watson: Every one of those cases is contested, and there's contingency in there too. Ted

mentioned Althusser: there's a crude base-superstructure thing going on. Not always but sometimes.

Kathryn Dean: He's trying to get completely away from that. The use of the word "bundles" is an attempt to get away from that dualistic thinking.

Judith Watson: Yes, "bundles" is much better. But there are certain points at which I think things are mediated. The relationship between what I would still call social change and environmental change is more complex and mediated. Even reproduction is not dealt with a great deal.

Kathryn Dean: I would have thought he says that environmental change is social change and vice versa

Judith Watson: He would, but it's easy to say it, harder to show it. What would really worry me is if people's work is ignored or neglected because it's seen too much as one-sided. For example Bourdieu is a useful theorist, and there's a lot of work to build that into a unified ecological-economic history. I think it's worth doing. Bourdieu, Gramsci, Foucault, all those writers that we think of as relating to society, we need to make them also relevant to environmental history. And you can't just say "oh they're only relevant to social history".

Kathryn Dean: They're all writers who were actually getting beyond that.

Ted Benton: When you say you're wanting to talk about sociocultural and political systems, you're saying that resonates with base-superstructure. When you use a concept like bundle, for instance, you insist on the integration of these things. As an alternative to dualism it seems to me there's a third possibility, which is making distinctions. Just because you're making distinctions doesn't mean to say you're committed to dualism. And you need to be able to talk about whether the Labour Party under Jeremy Corbyn can win an election without necessarily bringing in the whole ecological history of the planet.

Kathryn Dean: Sohn-Rethel is relevant. Moore is out to get modern science partly because of this mental artefact, ontologising or reifying of mental artefacts. And that has been a strong tendency in all that dualistic thinking. I suspect we're still not over it. It's difficult to find a vocabulary to do that, and he's trying to do it, and I want to give him credit for it.

Gordon Peters: A lot of human geographers use "entanglement". Isn't that the same thing as bundling?

Kathryn Dean: It's against linear thinking.

Judith Watson: Sometimes the way he rejects John Bellamy Foster, the original papers were written as a critique of Foster, and I'm not sure it's always that fair.

Jane Hindley: You've been over-reading. The book starts off saying that it's an invitation. It's not "this book is showing that everyone else is wrong". It's an opening to a conversation. He's trying to do something very ambitious. I'm not sure it succeeds. I'm not even sure if it's a reasonable project, but I don't think it's arrogant.

Richard Kuper: I don't think it's arrogant either, but it's slippery. I'm trying to grasp these concepts but I can never quite find out what they mean.

Judith Watson: But he's not giving enough credit to previous generations of thinkers.

Pat Devine: I think that's true. He doesn't mention O'Connor, he doesn't mention Polanyi.

Jane Hindley: I thought Polanyi would have been right up front.

Pat Devine: You need to address these if you're looking at the relationship between capitalist development and non-human – extra-human as he calls it - nature.

Ted Benton: But if it's an invitation to a conversation, in a sense it doesn't matter if it mentions other thinkers. And it may not really matter if he got the historic details wrong. I just remember us having this argument about Barrington Moore. It's a massively imaginative huge scope book and there's a huge literature showing he got all sorts of facts wrong, and of course he did. You can't do this stuff without making mistakes at some sort of level. But the fact he tried to put it all together as a kind of thesis meant that there's a huge conversation grew up out of that, challenging bits and bobs of it. So the real question is whether there's an overall argument there that takes us forward and whether that falls if you challenge particular empirical claims.

Pat Devine: That's what I was thinking about that when Judith said there's a lot of contingency and you could go different ways. That's all true but in the *longue duree* you have to abstract from that and see whether there are recurring themes in the momentum and the direction. I found myself in sympathy with a lot of what he was saying, but what wasn't clear to me was whether it was new. Whether it's a new way of putting things. It may not matter, actually, if he's putting things back on the agenda.

Graham Sharp: Foster and Burkett have almost completed a book in response to this.

Kathryn Dean: About the Four Cheaps. I think the point is that these were ensured in long-term political action. And that the co-operation of human and non-human nature won't be available any more. His strong opinion is that capitalism has come to the end of the road, because of the impossibility of sustaining Four Cheaps. He says they usually last about fifty years. Every fifty years there has to be a new project of identifying Cheaps.

Pat Devine: Kondratieff waves, but if I've understood the idea of commodity frontier, when capitalism finds that something is not cheap, then it looks for something else. I just read an article about how in 25 years time robots will have taken over.

Gordon Peters: The fourth industrial revolution. The question is: will there be enough rare earths and minerals?

Kathryn Dean: We're off to Mars, aren't we?

Pat Devine: The avenues for capital accumulation may be beginning to dry up but it doesn't mean that capital accumulation has finished.

Kathryn Dean: There's genetic modification of humans and of other organisms.

Graham Sharp: Marx in the appendix to Volume One made the distinction between the formal and real subsumption of labour. Many theorists now have written about the formal and real subsumption of nature. The stuff about genetic modification would be an example.

Ted Benton: That's not new in agriculture and horticulture.

Pat Devine: But it's a history that's led to increasing degradation and problems, with the industrialisation of agriculture.

Ted Benton: Then there's the question of how you theorise that.

Jane Hindley: That's what almost gets lost. He wants to throw out tap and sink, so that the damage that's being done almost becomes part of the system. If you try to visualise the theoretical framework he's trying to construct, they become dissipated.

Pat Devine: Maybe the fact that the Four Cheaps are ceasing to be cheap is his way of trying to get to that.

Richard Kuper: Part of the Four Cheaps seems to relate to Harvey's thing about dispossession. The guano on islands in the Pacific that feeds British agriculture.

Pat Devine: But the sources are becoming less easily accessible.

Richard Kuper: But are they? The digital revolution, the advancement and appropriation of knowledge that is freely available.

Kathryn Dean: Is it knowledge that's freely available, or information?

Ted Benton: This is why O'Connor's idea, which is a development of Polanyi, of capitalist processes of appropriation of nature undermining their own conditions, is really important. And I don't think that's clearly there.

Kathryn Dean: He does cite Marx on that.

Judith Watson: I think that's there in the commodity frontier, and that's why it's important to recognise where we do and don't have commodity frontiers. Another one that's very present in the early modern period but he doesn't mention is wool. Literally things were moved all over the globe until there was nowhere further in the globe you could push that.

Richard: Extensivity and intensivity.

Judith Watson: If you take cotton, there's probably nowhere else you could grow it where it isn't already grown. You could double the amount of cotton being grown in the USA but you would lose space for soya beans.

Pat Devine: But you have – you had probably, in diminishing quantities – substitutes for cotton. Once oil runs out you won't have those substitutes to the same extent. So who knows? They may find something else.

Ted Benton: There's an underlying, not that explicit thesis, an analogy with the declining rate of profit, the declining capacity of capitalism to appropriate nature.

Kathryn Dean: He does discuss that.

Richard Kuper: In dualistic terms, it's the declining rate of appropriation.

Ted Benton: If you were going to think that through you would have think about specific goods that meet specific human needs. Some people call these "ecological life support systems" that provide those. You could do it non-dualistically. But I don't accept those concepts.

Judith Watson: "Ecosystem services" is the most capitalist of them.

Ted Benton: It's used by Friends of the Earth and within limits it's actually quite an effective line of argument.

Pat Devine: But it's very dangerous.

Ted Benton: Absolutely. But the concept is drawing attention to something that if differently theorised is actually quite important.

Pat Devine: Costanza, who was one of the founders of ecological economics, was savagely criticised because he allowed himself to create a project to evaluate the value of natural capital. And there was the Thibes Project but that was really looking at the economic value of

ecosystems.

Ted Benton: We can sneer at this but it's actually the dominant outlook. It's absolutely entrenched.

Richard Kuper: We can be critical of this and work at it from the inside. If you want a value, we'll give it a value, and it will be a damn sight higher than you think it is.

Pat Devine: That's appealing to people's emotions rather than the scientific evidence.

Kathryn Dean: He's also saying, isn't he, that there were various nations that led these different phases of capitalism. The Dutch, the English, the Americans.

Pat Devine: And who's next?

Graham Sharp: Isn't he alluding there to the idea that capitalism first started in the Netherlands. Or was it in Venice?

Ted Benton: In terms of the Capitalocene or the Anthropocene, it seems to me that whole debate is very confused. If you're going to define geological epochs, which this borrowing of "-ocene" implies, that seems to me to be a separate process of historical periodisation of the earth. Quite different from the historical periodisation of human relationships. So you could talk about a new way of combining human activity with non-human materials, you can talk about capitalism inaugurating a new one of those, but to map that on to a periodisation of earth history seems to be to be idiotically anthropocentric.

Judith Watson: That's what the Anthropocene people do. But also maybe the Holocene does as well. If you were really using major geological changes, would you make a break at the end of the last Ice Age? We're just living in an interglacial.

Ted Benton: I don't know because I'm not a geologist, but I think it's deeply implausible to say that capitalism inaugurates a new phase of earth history comparable with the Jurassic.

Judith Watson: There are climate change deniers who say that it's arrogant of us to say that we can affect the climate. But it seems we can affect the climate. And there are extinctions. Maybe as many as there were at the end of the Cretaceous.

Richard Kuper: The end of the Cretaceous period was fairly extended. It wasn't the last 50 years, or the last 500.

Gordon Peters: The geologist Ian Stewart was on the television saying that it's the end of humanity not the end of the earth. Nature will survive quite well with a few degrees more, but if you see it as a history of extinctions, that would be the historical line to draw.

Jane Hindley: The rate of extinction is higher now.

Ted Benton: I'm not saying that there isn't a massive process going on.

Judith Watson: It's what you were saying about imbalance. Humans need nature more than nature needs us. You can have a perfectly viable planet without any humans living on it. And this oneness between human and non-human nature, does it extend to tectonics? Volcanoes and earthquakes aren't caused by human activity, except of course by fracking.

Ted Benton: He makes the point that some Greens talk about we're destroying the planet but what we're actually doing is undermining our own conditions for existence as a species. The planet will get on quite well without us.

Additional contribution by Peter Dickens

Jason Moore's book offers a historical overview and synthesis linking land, labour and external nature. It is certainly a novel and ambitious project but the kind of synthesis he is offering is, I believe, problematic. It is a history which is theoretically and ontologically ill-informed.

Furthermore, Moore's synthesis is politically disabling, offering little or no space for political and social contestation.

Moore's synthesis is based on the notion of "The Four Cheaps": cheap labour-power, cheap food, cheap energy and cheap raw materials. He builds up a considerable historical analysis and synthesis founded on these "cheaps", attempting to show how they have combined with one another during the evolution of capitalism. However, by the end of the book, Moore argues that The Four Cheaps are of declining importance. For example, he tells us that "by the end of early twenty-first century the end of Cheap Nature was in sight" (304). And by the end of the twentieth century The Cheap Labour strategy "is showing signs of wear" (304).

This analysis leaves me concerned about the ontological and theoretical bases of Moore's analysis. If the "four cheaps" are at the centre of the analysis and yet seem to be declining in significance in the present day, what does this say about the explanatory force of Moore's analysis? Of course, as Moore argues, it may be that these items which used to be cheap are simply no longer cheap under contemporary capitalism and its contemporary crises. But an alternative view is that Moore's synthesis is flawed, again because the theoretical underpinnings of the work are unsatisfactory, even non-existent. He rejects the work of Benton, Foster and others as limited but he would have done better to synthesise and combine existing work.

And Moore would have been well advised to synthesise his historical analysis in a very different way, one in line with that of Marx himself and of other contemporary authors. Specifically, a more theoretically and ontologically well-informed account would have focused on the labour process, the fusion between internal and external nature which it entails and the transformations to internal and external nature it creates over time. To put this another way, such a perspective would focus on how relations between capital and human nature (or labour power, "cheap" or not) are combined with external nature ("cheap" or not) to produce commodities, "cheap" or not. An analysis of this kind would also necessarily focus on how dominant classes have exploited both labour power (and human health) and external nature in the process of creating commodities and surplus value. Moore does not give much attention to ownership of these elements, ownership of land in particular. This is another startling omission for a supposedly "Marxist" analysis.

Making the labour-process as the central point of the analysis would result in "The Four Cheaps" having a much more contingent quality. "Cheap" land, "cheap" labour etc. are a feature of some eras in human history and in some societies rather than others. Capital has never simply demanded "cheap labour" or even "cheap land". As regards labour, the demand has been, and still is, for labour that is compliant and submissive. And, as Marx argued in *Capital*, the eventual aim is to incorporate (or subsume) the whole of the human body to the requirements of capital. "Cheap labour" analysis cannot recognise this subsumption. On occasion Moore moves towards recognising some of the issues mentioned above. Writing of the Via Campesina movement, for example, (in which healthy, sustainable food-systems were demanded by the poor) he confirms that this "agricultural revolution model is about class". (Moore's emphasis) Class struggle, he argues, is "always present" (289). But such recognition does not cause Moore to diverge from the book's central claim. The central process is again that of capital making nature (and human labour) cheap. My suggestion would reverse the causation. The central mechanism is that of capital combining external nature with internal nature in series of varied labour-processes which may or may not depend on "cheap" land and labour, "cheap" food and "cheap" energy.

Putting the labour-process at the heart of an historical study could be politically more optimistic. The "four cheaps" type of argument seems to imply either that political struggle is ineffective or is doomed to failure. There is no space left for opposition and struggle. But reorganising the analysis to make the labour-process at its heart would help show where points of opposition can be, and have been, successful. Moore's analysis seems to suggest that the problem of environmental degradation has somehow always been "out there", unattached from political

struggle. The reality surely is that people and their struggles are part of this “reality”. Furthermore, during the five centuries covered by Moore’s book there have been plenty of social and political movements - from the Diggers to the environmental movements of our time - which have recognised and engaged with such complexity. And they have of course attempted overthrow the class-system and its labour-processes and attempted to come up with new ways of working together and new ways of combining external and internal nature. Surely all this should be part of a “Marxist” history of capitalism and its links to the web of life. Moore’s focus is more wide-ranging than I have outlined here. But its central problem remains that of reducing complex issues into “The Four Cheaps”. And they are treated as a fact of nature, *dei ex machina* which apparently have no basis in human agency, in people’s work and experience and in many and variable forms of resistance.