



economists
for future

BEYOND ECONOMICS-AS-USUAL

t r e a t i n g a c r i s i s l i k e a c r i s i s



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About us

Economists for Future is an international initiative which aims to mobilise economists and use the influence they have to help avert the climate and ecological crisis. On the international level, we run targeted campaigns aimed at rupturing some of the discipline-wide inertia. On a national level, in Germany, we are building up a community of economists to push this agenda forward in departments and institutions.

Get in contact with the international team at info@econ4future.org

EDITORS & INTERVIEWERS

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Acknowledgements

We offer our sincere thanks to the nine interviewees for their great contributions. It is important to note that the nine interviewees do not necessarily share the same views nor did they have any involvement in the Foreword or the Afterword. They are responsible for their own interviews only.

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Foreword

The task of decarbonising the global economy is enormous. The task of doing so in a just way that enables prosperity is more enormous still. And the task of doing both in the narrow window of time we have left to avert the worst consequences of environmental breakdown leaves the enormity of this task with few historical parallels. The stakes are huge. If we are going to have a fighting chance of tackling this, it will need the hearts and minds of as many of this planet's eight billion people as possible. Everyone must, in countless different ways, play their part.

Last December we launched *Economists for Future* with the view that economists must play their part too. As an international group of economics students, we were taking part in the climate school strikes. Every Friday, we were taking to the streets to ask politicians and business leaders why they were not treating this crisis like the crisis that it is. After the protests, we would return to our studies only to be reminded that our departments, our textbooks and our professors were arguably no better at treating “this crisis like the crisis it is” than our politicians. It was just as much business-as-usual for economists as it was for any other group. Top economics journals were hardly publishing articles on the climate crisis, economists were hardly speaking out in public and departments were not covering these questions in compulsory courses. The economics profession was failing to play its part. It was failing to sufficiently mobilise its resources and use its influence to help combat the planetary emergency.

We founded *Economists for Future* on the conviction that this could and had to change. Our proposition was, perhaps ironically, very Econ 101: demand could bring about supply. If a greater response could be demanded of economists in a way that it had thus far not, they might ratchet up their supply; they might mobilise their resources and use their influence to help avert environmental breakdown. If economists were to play their part, this supply-side picture had to include the four main domains within which the profession's activities fall: research, teaching, policy engagement and public discourse. It had to be a discipline-wide response. And crucially, this increased supply and engagement from the profession must also provide fresh answers, since the currently proposed solutions have failed to deliver anywhere near the kind of emission reductions that could safeguard our futures. This was the argument we laid out in [our open letter](#). It was signed by 1,300 professional economists and reached nearly 100 countries. But this was only a start. It was a call for action.

Since our launch six months ago, we have been asking ourselves a series of questions about why these very visible failures within economics persist. Why are economists not more concerned about the environmental emergency? Despite the concept of scarcity lying at the heart of the subject, are economists failing to see just how scarce this window of time is and just how scarce our remaining carbon budget is? Perhaps they get the scale of this crisis, but if so, why are their concerns not translating into actions, in the form of curriculum changes, articles in top journals and most importantly, successful climate policies?

How could this be? Our puzzlement, our bafflement, at the insufficiency of the answers that have so far been proffered motivated this report. If, as a community, we are going to even try to push the profession to do more, we had better first understand why it has not yet done enough. A better diagnosis of the reasons will, we think, help the community get closer to the real leverage points for change. The kind of change that could create a multitude of spiralling positive effects and that might just begin to engage in the enormity and urgency of the task that this moment in history asks of the profession.

For this report, we have conducted interviews with nine leading economists about these issues. All nine have, in their own way, been beacons for change. They represent a spectrum of geographies, academic interests and levels of optimism about the changes that are possible. We offer our sincere thanks to the nine interviewees for their invaluable contributions.

The interviews are insightful but without a relentless bias towards action and a strong commitment to get organised within this community, they will count as nothing more than an indulgent afternoon read. If the arguments resonate with you, then act upon them. We lay out what this might look like in the Afterword. See you there.

Sam Butler-Sloss, Maria João Pimenta and Marc Beckmann.

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The following interviews were carried out in June and July 2020.

Michael Jacobs

E4F: Why does the profession not do a better job of dealing with the climate crisis?

Michael Jacobs: There is a really embarrassingly mundane answer to that. It is that the economics profession consists of lots of silos. The problem in economics is a problem of specialisation. There is a single silo of climate and environmental economists who do their thing. And the rest of the economist world is happy to let the climate people do climate. But equally, they are happy to let the labour people do labour and the macro people do macro. It is a very fragmented world. There isn't a kind of body which says, hang on these are the questions we must all study. Economists have not taken on their social responsibility to look at the larger problems of the world; they do their own thing in their own subdiscipline.

Economists have not taken on their social responsibility to look at the larger problems of the world; they do their own thing in their own subdiscipline.

E4F: How do we then surf the silos?

MJ: In a sense, the answer to that question has to be something like “which bits of the discipline transcend silos?” There are a number of answers to that. One is the professional associations, such as the Royal Economic Society, who are meant to be all economists — they should say something about this.

Another one is teachers and the curriculum. I would like to see economists taking a pledge, “I will treat climate as central to the study of economics and lead the way in integrating this into my teaching and research.” The problem is that teaching is done by members of the university department and if there isn't anybody who specialises in a subject, it doesn't appear in the curriculum. There are not many climate economists which doesn't help either. This is why your campaign is so critical. It has to be pushed onto the agenda. Somebody who isn't a specialist in that has got to learn it enough to be able to teach it. Professional associations can play a role. Economics departments can play a role. Exam boards and school curricula can play a role. Up to a point, I think the big names in the discipline can play a role.

E4F: What are the other levers for change?

MJ: As I've said, it needs an institutional push by the main bodies and associations of the profession. Something has got to break the inertial, institutional resistance to change.

It would be extraordinary if over the next five years, every economics department in the country and even around the world, does not start employing climate economists and those working at the nexus of climate, industrial policy and innovation. This is where the excitement is. This is where younger economists want to work.

Something has got to break the inertial, institutional resistance to change.

The other thing is that research councils are increasingly focused on real-world problems and solutions. The UK government now has a unified research and innovation mechanism which is trying to integrate industrial strategy and academic research. The government has said that climate change is one of the grand challenges that we need to address and we want academic research to be helping us meet this. The funding environment will help push departments and academic economists into doing that. I think there are some real levers there - in teaching, employment and research - for us to bring planetary economics and real-world economics into the centre of what economists and economics departments do.

E4F: What are the conditions in which paradigm shifts come about? And what could accelerate this process?

MJ: : Broadly speaking, paradigm shifts occur when a dominant body of theory becomes the dominant form of theory and then it encounters a problem in the world which it is not very good at analysing. Gradually the demand for theory from policymakers means people turn to other theories that explain it better. Usually, it isn't that economists change their mind but that new economists come to the fore. The climate crisis is going to require a similar kind of realisation. Economics without climate does not look like a good way of understanding the problems we face; a very orthodox neoclassical climate economics doesn't look like it either. We will need more evolutionary and institutional economics to understand this.

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We are in the conditions in which paradigms change. Unfortunately, paradigm shifts often occur quite slowly. We need to speed them up — we don't have long to deal with this. The interesting aspect here is that a lot of demand for this will come from the policy world, which will accelerate this process within the economics discipline itself.

Policymakers are increasingly saying we need a different kind of analysis to deal with these problems and it will be mostly economists that can do that.

E4F: How would you describe the role of an academic economist today? What is demanded of them in light of the ecological emergency?

MJ: The role of an economist is to understand the real world we are living in. There is a small branch of academic economics that is still within theories which are too abstract in my view. But economists should be studying the real world and then helping to devise policy.

We can't do this in the absence of the acknowledgement of climate change.

It does not mean that everybody needs to become a climate economist. In some areas, climate is not central.

But it has got to be in the minds of all economists. It has got to be part of what economics departments and professional economists do. There will always be some division of labour between economists working on different things but we can't have economic departments which don't cover this field. In a sense, that is the collective responsibility of groups of economists organised in departments to make sure that within a team, whether in an academic department or policy group, someone is thinking about this, working on this and is reminding everybody else that this is important for everybody.

Claudia Kemfert

E4F: Why do you think the economics profession does not share the urgency and the commitment to “play their part” that is seen on the streets around the world every Friday?

Claudia Kemfert: In recent decades, the economic sciences have become more and more distant from real processes that lie outside of pure economic logic due to the very strong formalisation and mathematisation. Homo economicus — who makes demand decisions based on income, prices and certain preferences — still, to a large extent, determines economic research and teaching. This is slowly changing. In the Network Pluralist Economics, for example, diverse research approaches are brought together in a targeted manner. However, the “real” economic sciences still regard applied research as second-class. That’s one reason.

The second is that environmental economics, in particular, develops recommendations for action based on the approaches of homo economicus, favouring pure “market-based approaches” such as a global CO₂ price or a global emissions

trading system, as the exclusive solution and ignoring all else. Such approaches imply that external costs must be priced in but social effects are ignored. Why such policy approaches fail in real life and what learnings the economic sciences have to draw from these failures are not sufficiently explored in research or education.

Another reason is that the energy industry only deals with conventional solutions — the solution is seen as purely technological. Nuclear instead of coal, hydrogen instead of oil. But renewable energies are more decentralised, they are closer to the people, and this changes market structures. All this needs to be researched by economics.

E4F: In what ways do you think the economics profession has been helpful and unhelpful in influencing climate policy in the past?

CK: More than a decade ago, some economists calculated the costs of continued climate change. This was a wake-up call for some politicians, but it also led to very strong opposition from the fossil fuel industry. However, these highly

mathematical, simplistic global economic models leave out important decentralised and political mechanisms. Bill Nordhaus was awarded the Nobel Prize, and rightly so, for his pioneering work on the economic assessment of global climate change and climate protection. Since then, for over four decades, a global CO2 tax has been demanded. To this day, it is still not there. Countries do not even manage to reduce their fossil fuel subsidies. Why is that? Economists must find answers.

Also we need these answers if we are going to implement socially equitable climate policy. Beyond the right of the fittest and the primacy of maintaining “the economy”. I am not just referring to the models of thought that are currently being discussed as “post-growth economics”. I mean concrete solutions for local or regional politicians. Application-oriented research. And more answers as to why the climate policies so far are rarely implemented or why the measures implemented have not contributed to avoiding climate change. Obviously the solutions proposed so far have failed. Avoiding climate change has failed. New solutions and explanations are needed.

E4F: Going forward, how could the profession do more to radically ramp up the climate ambition of policy-makers? And perhaps more broadly, what else is demanded of economists in light of the climate emergency?

CK : 1. Critical self-reflection

2. Questioning previous paradigms of thinking
3. An analysis of why economists have not succeeded in preventing climate change in any way.

It is remarkable that one of the most important books for climate protection and sustainability was not written by an economist but by a career change-maker: Kate Raworth. In her book, *Doughnut Economics* makes it very clear what the economic sciences are lacking in order to provide real, successful and feasible solutions for sustainability and climate protection. The wonderful visualisations of her approaches create narratives and images that are necessary to better understand today’s context. Likewise, Marianna Mazzucato, in *The Value of Everything*, makes it clear which fundamental mistakes our current system is making and why the economy stumbles from one crisis to the next.

Obviously the solutions proposed so far have failed. Avoiding climate change has failed. New solutions and explanations are needed.

We need more basic research which, on the one hand, deals with these fundamental problems of the economy and on the other hand, provides more application-oriented solutions for people and politicians. Any teaching of economics should deal with sustainability, climate protection and take pluralistic approaches. We are at a turning point — as are economists.

Grieve Chelwa

E4F: Does economics have an “Africa problem”?

Grieve Chelwa: I would certainly say yes. I think there are many ways in which one can arrive at that conclusion. One way is to borrow the approach that has been used in the work on gender. Various disciplines have asked the question “Does this discipline have a gender problem?” by which they mean does the discipline have an underrepresentation of women, for example. One can use that kind of criteria in economics to ask are Africans underrepresented in the economics profession. When most people think about the economics profession, they think the economics profession looks a certain way and it has certain arguments, journals and ideas. The question is then “Are Africans underrepresented there?” The answer to that question would be yes.

E4F: Why do these problems exist and persist?

GC: There are structural reasons for this — issues of outright discrimination and racism. Discrimination means that folks want to

participate but they are prevented from doing so — they are pushed out. Racism implies that folks endogenously, on their own, stay away. For example, I often choose to stay away from some conferences and some debates precisely because I don’t want to experience racism. That is one angle.

Then there is also the argument of issues like resources. Resource allocation disproportionately favours economists in the North at the detriment of economists in the South even when it is a research project or a research agenda about stuff that concerns the African continent.

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E4F: What are the main implications on the economics profession’s ability to solve developmental and climate problems?

GC: It’s very difficult to come up with solutions or to understand problems if the folks who you are

trying to devise solutions for are not present in the debates.

There are many reasons for this. One of them is that it is just the morally right thing to do, that is, to have a diverse set of people around the table talking about these problems. But also, if those solutions go pear-shaped — as often happens with social science work because social reality is very complex — the group that is excluded will have to bear the brunt of those policy mistakes. Therefore, it is important to include them in those debates. The obvious consequence is that the intellectual work tends to be weaker. There is a lot of work that has come out of the North regarding development issues in the South. This work is largely vacuous. It is not nuanced. It tends to be very simplistic and highly stylised. That is the issue: the intellectual work that comes out of this type of exclusion tends to be empty. It doesn't tend to be very relevant insofar as answering the important questions, such as “what can Zambia do to develop?”

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E4F: How do you think the profession can turn the tide on the problems you have described? What are the levers for change?

GC: These are big problems. Increasingly I have become more pessimistic about whether the economics profession can change. Things like racism and discrimination, these are very ingrained, especially to the extent that you think that poor parts of the world are populated by people who don't matter. Thinking that you can move to a place to experiment on people and write papers about them and then run away again, you must think that those people are not people. So I don't know. What can change? How do you change racism? How do you change sexism? How do you get people to stop practising discrimination? I have no idea. I think there is a need for soul searching by people who are considered leading lights in the economics profession. There is a need for honesty, to own up and say a lot of our intellectual work has had racist foundations, has had white supremacist foundations. But I don't see that owning up happening. When you say to me “are there any levers for change”, I am close to saying the entire discipline needs upending and we build it afresh. If you had asked me this question three to four years ago, I would have probably given you a couple of vague responses but I am increasingly very despondent about it.

E4F: You just mentioned that we could start the discipline afresh, if you could, how would you do it?

GC: First of all, it would have to be pluralistic insofar as methodological orientations are concerned. We would not be hung up on one type of methodology or one set of assumptions. To publish a paper in the leading journals of the profession, it needs to be quantitative. It needs to satisfy some “state of the art” methodology. But there are a lot of questions that folks want to answer that do not lend themselves directly to those approaches that are seen in the leading journals. If I had to build this discipline from the bottom up and afresh, I would make sure that there is an equal footing in terms of representation. Every issue of a journal should be representative of the world as we know it.

There is a need for honesty, to own up and say a lot of our intellectual work has had racist foundations, has had white supremacist foundations.

These are very difficult discussions. I think the more people talk about them, the more we can get to a better place. The profession has a lot of potential. The discipline itself is a very powerful discipline. Economists tend to be very highly regarded. I think we misuse that regard that people have for us. We need to use it much more judiciously.

David Colander

E4F: Do you still think a significant fraction of the discipline operates at a distance from the real world? If so, where is that most evident? And why does such a phenomenon occur and persist?

David Colander: Yes, I think a significant fraction of the economics discipline operates at a distance from the real world. That is not necessarily bad. There are many roles that economics can play which require different real-world connections. The problem is when economists move from abstract models that do not match the real world to real-world policy advice, which needs to be based on much more than abstract models. It is that jump in applied economics where I think the serious problem with economic methodology is. I spell that argument out in my recent ODE Clarke lecture.

E4F: What is “the art of economics”? And why does the world need it today?

DC: The art of economics is a blend of normative and positive economics that is used to frame the narrative about policy. It is what most applied policy, in my mind, should be. It is much more

than applied economics as most people think of it — which is the empirical part of positive economics. My conception of applied economics involves judgements about all types of values and the relevance of empirical evidence. It also requires a full statement of goals and side effects of policy which are generally multi-dimensional. Those goals must involve moral judgments — for example, pricing of human organs can be considered immoral and thus, pricing policies are not to be considered as a policy option. To make such decisions requires using a philosophical methodology that involves engaged discussion. Values cannot be separated from policy.

The world needs the art of economics today because, in my judgment, we as economists are missing the important goals. We produce more and more “stuff” when “stuff” isn’t that important. How the system shapes tastes and values needs a lot more study and consideration than we currently give it. If a philosophical discussion of goals were part of applied policy analysis, society would be a lot better off. Consider climate change — the small changes that standard policy discusses are not going to achieve the large

change needed. We need a change in tastes where people want far fewer goods than they currently want — including travel experiences.

If an economist's policy model does not include endogenous tastes, (and it doesn't) economists have nothing to say about policies designed to change tastes. That takes them out of the important policy debate.

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E4F: What would a more productive allocation of the profession's resources look like? And how might that be achieved?

DC: Given most economists teach, a productive allocation of the profession's resources would include a large majority of the profession being trained in economics that would help them teach better. It would involve far less focus on articles and publications as measures of economists' output. I have no idea how that might be achieved. Institutions, such as the economics profession, create enormous rents for people in them and they are highly resistant to change. Change occurs when technology changes and that may be occurring now with online teaching — depending on how it evolves. I think colleges and universities are in for some radical changes.

E4F: How do economists perceive their role in society? How, in your eyes, might that role be positively modified?

DC: They regard themselves as scientists. That fits for a few, but I think most policy economists should view themselves as craftsmen — in one paper I've suggested seeing them as general contractors who know little about a lot of things and can put it all together to arrive at a policy package.

I think most policy economists should view themselves as craftsmen.

They should also regard themselves as teachers since that's what most of them get paid for. The skills needed for these occupations are different than the skills needed for being a scientist and doing pure research. There is also room for some engineers, who are closer to scientists but have a loser set of rules governing the discovery and research process.

All this would require a major change in graduate education, which is far too similar at all programs and which doesn't prepare students to become craftsmen, general contractors, or engineers — it focuses too much on preparing them to be scientists.

Jane Kabubo-Mariara

E4F: How well have economists engaged in the environmental crisis? And in particular, how sufficiently have economists from the Global South engaged in it?

Jane Kabubo-Mariara: Climate change and the attendant ecological crisis are one of the greatest challenges for public policy in present times. Developing countries, and especially their food and agricultural sectors, are experiencing the brunt of the crisis. Natural scientists, at times working with economists, have done a good job in generating evidence that the world is warming and that this is predominantly due to human activity. However, economists and other social scientists have not kept pace in research in this area, despite this being a socio-economic problem. Furthermore, the nexus between climate change and ecological crisis needs much more attention than economists have so far accorded it.

There is very limited research engagement in the field of climate and ecology in the Global South. This is evidenced by the relatively low participation of Southern experts in policy

dialogue, including in initiatives such as the IPCC, IPBES etc. Another pointer is the limited number of publications in this field in high-impact journals, not to mention limited or non-existent participation in editorial boards of top journals. Further, the number of PhDs already produced or working in this area, from and by the Global South, is dismal compared to the developed world. Researchers are not devoting adequate time to further this discipline. When in collaboration with their counterparts from the Global North, Southern researchers have often been confined to mundane roles such as data collection and linking projects to local policy actors and other stakeholders where required. Where a pool of excellent researchers exists, they are concentrated in one or two leading institutions, creating the risk that other local institutions are locked out of the limelight for funding and overseas partnerships. Insufficient research translates into data and knowledge gaps which are major constraints in furthering the sustainable development agenda. In many cases, the main research agenda is often driven by scholars from the North.

E4F: Why have economists from the Global South not adequately engaged in the environmental crisis?

JKM: Anaemic research in the Global South can be associated with inadequacies in funding and capacity. Domestic research funding in developing countries is scarce. Research is not a priority for most governments in the South, with investment in research accounting for less than one per cent of GDP in low-income countries. Funding to specific research issues such as climate change is much lower and at times non-existent for ecological issues. Public expenditure prioritises development implementation and leaves little for research. This is despite the fact that countries in the Global South typically fund their research with public funds unlike in the Global North where the business sector is a big source of finance for research activities. Researchers in developing countries are poorly paid. Many have to work in the private sector, away from scientific research, to make ends meet. This reduces the amount of time spent on research and publication.

Where a pool of excellent researchers exists, they are concentrated in one or two leading institutions, creating the risk that other local institutions are locked out of the limelight for funding and overseas partnerships.

Many young scholars see the scientific and research environment as too restricted, too discriminative, too competitive, and too poorly funded, and thus inadequate incentives to attract them. The limitation on resource support is coupled with limited access to and/or high cost of subscriptions to acclaimed journals; much higher than their per capita income, which limits the scope of literature especially on cutting edge methods. The political and economic instability in several developing countries also contributes to a lack of long-term goals that are essential to the development of any science or expertise.

Over time, there will be a need to reduce the existing dependence on research institutions and researchers from the Global North.

E4F: How can these problems be addressed?

JKM: There exists a good case for strengthening research capacity, in climate and ecological disciplines. Scientific research is a pre-requisite for human and societal development. There is a strong correlation between the level of advancement of scientific research and the standard of living. However, research can only thrive in an environment that prioritises, supports and appreciates its importance. Governments and other stakeholders in the developing countries need to increase funding to local research institutions and researchers. To promote research as a viable career, supplementation of researchers' salaries and provision for research awards have to be considered.

The working environment for researchers could be improved by providing training and mentorship opportunities, access to research resources including technology, library and online facilities, scientific publications, funding for participation in workshops and conferences, postdoctoral positions, re-entry grants following completion of PhD programmes abroad etc. Intellectual isolation of Southern researchers could be addressed by fostering equitable exchanges with their counterparts from the developed countries. Southern researchers should be encouraged to engage more with national, regional and global networks. Over time, there will be a need to reduce the existing dependence on research institutions and researchers from the Global

North. This could be achieved by improving the capacity of local research institutions to deepen intellectual output, research administration and policy formulation. This is much more important now in the face of deglobalisation brought about by COVID-19.

Though scholars in the Global South face a myriad of constraints that hinder them from making a significant contribution to addressing the climate and ecological crisis, their counterparts in the North could do a better job in ensuring a sustainable contribution to the discipline — by ensuring that they support Southern scholars where possible through capacity development, inclusivity and more mutually beneficial networks. The scholars in the Global South should, on their part, invest more in capacity building in this field despite the constraints they face.

Dimitri Zenghelis

E4F: To what extent do you think that a path-dependency framework can be taken to the economics profession?

Dimitri Zenghelis: A lot of the innovation story is about overcoming the power of history and of inertia. That applies to knowledge and behaviour as well. You sweat the assets you have and, in most cases, these assets are historically accumulated. In an economist's world, this applies to the kind of models you use and build. You've built up an understanding of these models, which were designed ostensibly for looking at something very different to climate change: not as long term or as uncertain; certainly, not as path-dependent and prone to tipping points. But you're familiar with them or you've built them, so you use them. They have these assumptions of a unique equilibrium which clearly doesn't apply to a world where you can very quickly bifurcate into a completely different innovation track if, for instance, you commit early to decarbonisation. So these models become limited.

Economies of scale and network complementarities mean the system can switch state fast (from fixed-line phone to social media, for example): "non-convexities" in economic language. This means an inability to converge to a unique equilibrium which causes a lot of headaches for modellers. More interesting is to focus on the processes that generate structural shifts. Models are fine as long as their limitations are properly understood. In the climate transition timescales, this means they are good for "as if" or "assume that" simulations, but terrible for long run forecasting. But modellers often don't have a good enough incentive to explain their limitations. So they get interpreted as something that is at best misleading and at worst quite dangerous.

E4F: Do you have any thoughts on why economics did not change its approaches to address climate change faster?

DZ: It didn't need to. There was a sense that you could just get away with cranking the handle on a model that wasn't fit for purpose or assuming away the very questions that you were most interested in.

But now I think two things have changed. One is we have historical evidence of the power of some of these tipping points. The other is an understanding of the actual scale and magnitude of this - not just climate impacts but in the 80 per cent decline over the last decade in key renewable costs, such as solar PV and battery storage. This isn't peripheral. It's not marginal. This is huge. This is revolutionary. It's a complete change in our energy and economic system on a scale not seen since the industrial revolution.

There was a sense that you could just get away with cranking the handle on a model that wasn't fit for purpose.

The language of transition and transformation has to be brought to the forefront. If you're going to say something meaningful about that change, you need models that reflect that. You have to move away from very narrow empirical models to incorporate a broader range of behavioural, theoretical and agent-based models. This is a structural change *par excellence* — they don't come bigger than this. This structural change is not just an exogenous supply shock. It is something that is endogenously created. The best way to model the future is to design it. In this case, very consciously with the expressed purpose to decarbonise.

You have to be able to say something about those transition mechanisms and endogenous propagation mechanisms if you're going to help decision-makers make sense of the world.

E4F: To what extent do you think policymakers are still using bad economics to govern their climate policies?

DZ: Probably to far too great an extent. The very fact that they tend to ask what it's going to cost as a percentage of GDP is a misunderstanding of the question. The right answer to that question, for something that is so replete with these endogenous path-dependencies, is "it depends": the later we do it and the more we mismanage, the more costly it's going to be. The earlier we start it and the better we manage it, the less costly it's going to be.

These are much more complex stories than just looking at short run empirical data sets. They are about learning from historical transformations of the past, learning from how expectations have propagated to things like social psychology, learning from agent-based modelling. A lot of this is also about strategic complementarities. Any individual's, or policymaker's, or business' payoffs to invest in green technology is a function of what they think everybody else is going to do. Managing expectations is critical.

E4F: Where do you think Economists For Future can put pressure on the economics profession to go further, faster?

DZ: Paul Romer has written a couple of wonderful papers about the discipline of economics and the degree to which it is self-referential. Getting stuff published in the American Economic Review (AER) requires applying models in a way that delivers very little practical use. The models are either too limited, overidentified or they make strict exogenous assumptions. But because the economics community is talking to older generations of the same economics community, there is an incentive to keep working within the same constraints of the past which are not fit for the topics of the future. Romer ends up asking himself why he is blowing a whistle. And he is very blunt about it: he has been the chief economist of some of the highest-ranking academic and multilateral institutions in the world, he no longer needs to get published in the AER. He doesn't rely on the sort of nepotistic network of peers in order to advance his career.

The language of transition and transformation has to be brought to the forefront.

That's a lesson there for young economists: to look at the very talented economists who look beyond the confined, historical wisdom of the profession in order to apply economics to problems that are relevant.

The best way to model the future is to design it.

E4F: But arguably, the older folks have more capital to create change.

DZ: Yeah, they do. That's right. That's why I think, unless you're John Maynard Keynes and you're so talented you can turn the entire discipline on its head, the young economists have to slightly cheat by using the kind of examples from more experienced senior economists to show that they are not just offering some sort of detached, revolutionary new-aged thinking. But that they are actually being far more creative in applying the tools of the profession in a way that is fit for purpose. It's a form of grounding without taking shortcuts.

Jayati Ghosh

E4F: What frustrates you about how the economics profession engages in topics such as development, gender and climate change? What does it get wrong?

JG: Almost everything. They are making mistakes about how to understand and therefore prevent financial crises; reduce and prevent deep inequalities (within and between countries); enable states to meet the social and economic rights of their citizens rather than respond to the supposed needs of finance; deal with the long-term problems rather than the immediate short-term ones.

What is important is to enable people with differing perspectives to also be published in the same journals, to also be given pride of place in conferences, to also be able to debate in the plenaries with the ones whose utterances are taken as gospel.

Economic activity is increasingly directed towards profit and that doesn't take into account all kinds of externalities, positive and negative. It doesn't take into account the future. It doesn't take into account those who are marginalised because they don't have economic votes — purchasing power. It doesn't even recognise a huge amount of work: all the unpaid work done by women, for example, within households and communities. These are just some of the many ways in which it is failing to do what it is supposed to be doing — failing to actually improve the welfare of people. There are, of course, some amazing and insightful voices, but they are in the minority.

E4F: Why do you feel that the economics profession makes these mistakes?

JG: There is a deeply political element to the way that economic thinking is propagated. This unfortunately happens in a number of ways. It happens with respect to whether or not you get jobs and tenure, and you get tenure depending on whether and where your work has been published.

The top journals will not publish certain kinds of things. What is important is to enable people with differing perspectives to also be published in the same journals, to also be given pride of place in conferences, to also be able to debate in the plenaries with the ones whose utterances are taken as gospel. That doesn't happen. I think that is a very deadly mistake for the discipline.

E4F: Why is there such a lack of geographical diversity in the profession?

JG: It is the power structure in the discipline and a lot of it is self-reinforcing. How many Nobel Prizes in Economics have been given to those located outside the Global North? Are we really saying that there is no economic insight in the rest of the world? How many of the books and articles that you get given as students, even in development economics, are by people working in the developing South?

In editing *Alternative Theories of Economic Development*, we were shocked to discover so many wonderful economists across the developing world whom even we had not earlier heard of because everything is mediated by the North. We attend conferences in the Global North. We discover each other's work only when it is published by the accepted journals, which are all in the global North. Everything is mediated by that. We miss the very insightful work that is being done all across the world.

That is why we set up this network called IDEAs to promote and disseminate the work of development economists based in the South.

E4F: How do you think the profession can turn the tide on some of these problems? What are the important leverage points for change?

JG: There are so many. First, we should encourage diversity, in terms of origin, skin colour, gender and so on. But also where you are located and perhaps more importantly, what your perspective is. It shouldn't be that everyone is the same, cookie-cutter modern neoclassical economist with no knowledge of the wider tradition.

Second, teaching everybody history of economic thought and properly. Economics is not a natural science. It is a social science. Or shall we say it is a social study. It is a modern philosophy. This means we have a huge amount to learn from people who came before. Teach everybody a real and global history of economic thought that recognises economic thought outside the Global North.

Third, get away with the obsession with mathematical models. The task is to try and understand the economy and economic processes, and how the two interact with other processes. That's the job.

How this economy works and what the mechanisms are. If mathematics helps you — fine. But if that is all you use, then you will not understand the economy.

Fourth, look at processes and broader macro patterns. There is a tendency to get very micro. It's been happening for centuries, since the marginalist revolution. This shift towards the micro, as far as development goes, reached its apotheosis in the randomised controlled trials revolution. It has done a great disservice to the discipline because it has shifted people away from looking at broader economic processes.

When you're teaching, talking and writing, be conscious of who you quote. Be aware of the limited judgements that come from certain axiomatic tendencies within the discipline.

E4F: How might these points be pushed up the profession's agenda more effectively?

JG: Rethinking Economics is an absolutely vital movement but it is facing an enormous power structure, which has lost its validity and usefulness, yet persists.

How does one change it? Well, it is great that you people have a movement because it is not something that you can do as an individual.

So many of my students have to end up

conforming. I tell them, it's fine you have no choice, you've got to survive, you've got to keep your job but don't forget what it's really about. Remember to keep thinking, doing what you think is real economics and expanding your own reading and vision. When you're teaching, talking and writing, be conscious of who you quote. Be aware of the limited judgements that come from certain axiomatic tendencies within the discipline.

Keep going and keep at it: the power structures are indeed strong, but then again, ultimately nothing is written in stone.

Penny Mealy

E4F: Why is much of economics currently not well-placed to analyse transformational change?

Penny Mealy: The “why” is an interesting question with a multitude of possible answers depending on where you sit. Throughout history, numerous economists — from Thorstein Veblen to Joseph Schumpeter to Brian Arthur — have lamented the field’s limited emphasis on disequilibrium analysis and non-marginal change. There’s a wonderful quote from Bill Nordhaus and James Tobin that I think sums it up well:

“The steady equilibrium growth of modern neoclassical theory is, it must be acknowledged, a routine process of replication. It is a dull story compared to the convulsive structural, technological and social changes described by historically oriented scholars of development... The theory conceals, either in aggregation or in the abstract generality of the multi-sector models, all the drama of the events — the rise and fall of products, technologies, and industries and the accompanying transformation of the spatial and occupational distributions of the population.”

Encouragingly, there have been significant efforts in the more heterodox fields of economics to develop the analytical apparatus to grapple with the process of transformational change. However, relatively little of this research has infiltrated into the economic mainstream.

E4F: How widely recognised would you say these analytical shortcomings are across the economics profession? To what extent are they acknowledged and acted upon by the mainstream?

PM: For transformational change to occur, it usually involves some kind of positive feedback process (or multiple feedback processes) that triggers further rounds of effects that are greater than the original change. I think it’s widely acknowledged that mainstream analytical approaches such as general equilibrium models can run into issues when trying to incorporate these nonlinear dynamics — and indeed, there are some wonderful strands of literature that have highlighted issues associated with modelling increasing returns or processes involving cumulative causation.

In response, there has been increasing effort devoted to harnessing the vast amounts of data and computational power we now have at our fingertips to develop new analytical tools, such as agent-based models, that can more easily accommodate analysis of transformational change processes.

For transformational change to occur, it usually involves some kind of positive feedback process that triggers further rounds of effects that are greater than the original change.

While these alternative analytical approaches are yet to be fully embraced by the economics profession, I am hopeful that the increasing number of global challenges requiring a better understanding of transformational change, such as transitioning to a net-zero economy, will accelerate their uptake and acceptance.

E4F: Why do you think the transformation required to reach a fairer net-zero world does not get more attention from economists?

PM: Andrew Oswald and Nick Stern recently bemoaned how little attention the economics profession has devoted to climate change research. They demonstrated that the top-ranked economics journal — the Quarterly Journal of Economics — has published zero articles on climate change since its inception in

the late 1800s. Zero out of 4700 articles in the journal's history! Other top-ranked economics journals have only done marginally better. In reflecting on why such little climate change research has made it into top economics journals, Oswald and Stern suggest that the economics profession might be trapped in a Nash equilibrium where few economists write and publish climate change articles because other economists are not writing and publishing them. James Heckman has made similar remarks in what he calls the *Tyranny of the Top Five Journals*.

Facing career pressure to publish in top journals, economists (particularly those in the earlier phases of their career) may be more likely to target topics or analytical approaches that appeal to the perceived tastes of existing editors. As a result, we get more of the same old research published in top economics journals, rather than research that is creative, novel and relevant to present-day problems.

E4F: What changes within the profession do you think could help unlock a powerful wave of economic inquiry geared towards accelerating the transition to a just post-carbon world? Do you think there are any sensitive intervention points within the profession that could help achieve this?

PM: Given the dwindling time we have left to avert the worst consequences of climate change, there is now a very strong demand-side pull from policymakers seeking to better understand, navigate and drive transformational change towards a just post-carbon world.

On the supply side, I think there are three key factors that could help enable the economics profession to better respond to this demand.

The first is to respond to the Top Five Tyranny effect with leadership to develop more balanced and inclusive criteria for career advancement within the profession. In addition to increasing the diversity within mainstream economics, incentivising efforts to push boundaries and respond to pressing economic challenges are also likely to generate insights that will drive greater living standards for the public more broadly.

The second relates to the analytical frameworks. It's often said that "it takes a model to beat a model." Once alternative modelling frameworks can demonstrably outperform the existing mainstream general equilibrium approaches,

I think it would be difficult for the economics profession to not embrace these tools for analysing policy questions relating to the post-carbon transition. While this is something my colleagues at INET at the Oxford Martin School are working hard on, we desperately need more people and resources to help scale these efforts up. And we're really hoping that by kick-starting the use of more realistic, dynamic models for more informed policy-making, it might, in turn, encourage more interest, trust and further applications of these modelling approaches — a positive feedback loop!

It's often said that "it takes a model to beat a model".

The third aspect is education. We must continue to transform the way economics is taught. With the exception of CORE-econ, most undergraduate economics textbooks predominantly focus on marginal analysis. While non-marginal analysis involving positive feedbacks, tipping points and multiple equilibria is potentially more difficult for students to wrap their head around, even providing a basic intuition will better equip students for facing today's economy than continuing to assume these dynamics away for the sake of analytical tractability.

Yanis Varoufakis

E4F: How do you think the profession's treatment of the climate crisis fits into the criticisms of the profession you have previously made? Do you think it is a testament to your previous criticisms? Does it also unveil new ones too?

Yanis Varoufakis: If you look at the way in which economics is introduced to students to begin with: first, you are introduced to a world in which markets can never fail. The world of perfect competition and efficiency. Once you go through the various hoops as economics students of solving mathematical exercises and geometry, and everything that is involved in proving the fundamental theorems of microeconomics, then later on, your professor says "by the way none of this works if you've got externalities." And the concept of externalities is introduced — which makes a big difference, however, to the wellbeing of everyone. As we know from life, the default position is a very powerful position.

We live in a world of externalities, yet it is first presented to students as a world without externalities. Externalities are introduced as an exception, as something external to the model. I think this makes a very big difference. The default matters. Our mindset is such that the default position is taken to be the normal position. Whereas it should be exactly the opposite: markets fail, especially when it comes to climate change, and here are the very crazy assumptions under which it wouldn't fail. In the end, it makes a very big difference because the default position draws students to think that whatever the default position is, if we don't do anything, it will probably be what happens. Whereas in the case of environmental damage and climate change, it is precisely the opposite.

E4F: Considering that you, alongside others, have been on a mission to "humanise" and "civilise" economic theory for a couple of decades now", how has this project gone?

YV: Oh terribly. It is a dismal failure. It is proving an impossible task. And the reason, of course, is the immense power of solving

mathematical problems in a manner that leads to a determinate answer. This is what I call the power of determinacy — the urge towards determinant answers. The problem with economics and economic life is that it cannot be portrayed as a system of equations that has a determinant answer. Even if you manage to portray all the qualities that make up our lives as quantitative systems of equations, it is impossible to solve them. And this indeterminacy is the stuff of social life. It is what makes society interesting.

Our mindset is such that the default position is taken to be the normal position. Whereas it should be exactly the opposite.

Economists have managed to portray themselves as “scientists of society”, with historians, economic historians and sociologists being hand-waving demagogues, compared to the hard science of economics. In other words, it’s like saying this is a theorem which is beautiful, we can prove it, but it means nothing regarding existing societies. Yet, the economics profession draws enormous power, wealth and research funding because of those theorems. So they have to teach them. They have to weave a whole narrative around them. Then when it comes to climate change, it will always be reduced to the exception.

E4F: Do you think the efforts to change economics are a lost cause? Do you think there are lessons that can be learnt from yours and others’ efforts over the last two decades?

YV: Well, the first lesson we learnt is that we cannot bypass the dominant paradigm. We cannot ignore it and go do our own thing. I mean, we can and I have been in departments that have spawned alternative departments of political economy and so on. They have provided a very good education to their students. But in the end, all those departments and doctor programmes die out because of funding and the cultural hegemonic dominance of the neoclassical kind. Is it a lost cause? Well, no cause is lost. No resistance to the status quo is futile. But it will never succeed either. It’s a cause we have to keep fighting, but we are never going to win until, and unless, we move beyond capitalism. That’s my view.

We cannot bypass the dominant paradigm. We cannot ignore it and go do our own thing.

E4F: Considering the pandemic, where do you see this project being now? Going forward, where do you see leverage points for change?

YV: I think COVID-19 has strengthened the forces of evil. It has created circumstances that enhance the disconnect between the world of money and the world of real people — with central banks refloating financial markets. Financial markets are doing very well, while capitalism is collapsing. This disconnect is, if anything, reinforced by COVID-19, which means more inequality because the world of money is always going to have people in the 0.01 per cent that make even more relative to the 99.99 per cent. That does not mean we should paint a very bleak picture and stick to this. We need to paint a bleak picture because the picture is bleak and it will help us get organised.

I think COVID-19 has strengthened the forces of evil.

There are lots of points of leverage. This is a paper-tiger, this capitalism we have — it is exceptionally fragile. Its morals are bankrupt and it relies on states to the extent that we citizens have the capacity to vote and to take actions. We can bring that paper-tiger down.

But for that, we need to get organised because the bankers and the fascists are very well organised internationally. They have a lot of transnational solidarity. We can do something similar. We need to do something. If we don't do anything and expect better results from our inaction, then we are responsible for our fate.

Afterword

Reflecting on the interviews: the year to ramp up demand

Economics is, in many ways, a deeply unacademic machine: conformity is too often its default, and scrutiny on a more fundamental level is often too scarce. These tendencies create a high degree of path-dependency, which is evidenced in the overwhelming sense of continuity that can be seen in top journal articles, curricula and departmental leadership. The implication is that inertia is high and paradigmatic shifts are rare.

Even without a climate and ecological crisis, the case for change in the profession looks remarkably strong: the global financial crisis made much of current economic theory look irrelevant. Fundamental questions about how the economy operates, who it works for, and how that affects society were increasingly entering the mainstream of public discourse. But the profession rarely paid these concerns more than lip-service. It remained business-as-usual; it remained economics-as-usual. Against this backdrop, *Rethinking Economics* emerged. It now has more than 100 groups across 30 countries. *INET* launched with some of the profession's most prestigious names backing it: Nobel Laureates were calling for change.

Today, thanks to those efforts and those of many more, we are beginning to win this battle. Some argue we are witnessing the early stages of a paradigm shift in economics as we see a move towards greater empiricism, more application, more complexity, more pluralism and so on. Change is happening. And on the current trajectory — if this were in line with traditional paradigm shifts — the profession would look dramatically different in a generation's time. Perhaps that picture is a positive one.

However, when you add the climate and ecological crisis to this picture, everything changes. For the simple reason that in the climate context, winning slowly is losing. Environmental breakdown is already here — tragic humanitarian disasters are already happening. In this context, incremental change simply won't do: that is true whether you consider the actions of politicians, the fossil fuel industry or the economics profession. We do not have a generation to tackle this. It has to happen now.

The critical question therefore is how do we accelerate this paradigm shift so that it occurs in the coming years rather than over the coming generation?

On this question, in particular, we would really welcome your thoughts. How are we going to achieve this within the kind of timeframe that the climate crisis demands? From the departmental to the international level, what and where are the pressure points that will drive transformation?

Inspired by the interviews, we think these efforts will need to include:

1. Embracing credible disruption

Disrupting the discipline-wide inertia is an imperative for both the health of the profession and the planet. For disruption to be effective and persuasive, it must be credible. We must combine academic rigour with the urgency and outrage of climate activists. Outrage can help motivate a more rational and radical response. Outrage is warranted, for example, since so many of the most prominent economics journals have barely published research on climate change. How can such an established situation, happening at the very top of the profession, be credibly disrupted?

2. Leading economists taking responsibility

Those in the profession who have power, prestige and influence must roll up their sleeves and demonstrate leadership. This is not about making a statement or signing a petition that endorses a carbon price, and then thinking you have played your part. This is about action and implementation across the discipline. If this is front-of-mind then it must translate directly into tangible change. This change must be visible in the departments' hiring decisions, the editorial boards' special issues and the university curricula. It must translate into change now. Big names carry clout and have a greater responsibility, not only because they have the power to affect change but because they owe it to the next generation.

3. A geographical balancing out of the profession

The effects of environmental breakdown are unevenly spread. Many of the countries that are most vulnerable to climate impacts are those that did the least to cause it and have the least resources to adapt to it. We think that if the resources and power structures of the profession were more evenly distributed the profession would be much quicker to react to this emergency. It might start to provide meaningful answers to how the world achieves climate justice.

4. Getting organised

This is going to have to come from as many angles as possible. Relying on a few individuals to change the game would be a mistake. Everyone — students, early career academics, tenured professors, departments, associations, editorial boards and the public — has a part to play in this. We must all courageously collaborate and organise. A few ways to do this are:

- There are wonderful existing organisations. These include *Diversifying and Decolonising Economics*, *Rethinking Economics*, *the Young Scholars Initiative*, *Economics for Inclusive Prosperity*, *the Sadie Collective*, *the Network of Pluralist Economics*, *Oikos International*. Join them. Expand their spheres of influence. Raise their climate ambition.
- A large number of readers will already be in, or affiliated to, economics departments. Who gets hired and what gets taught will be critical. Try to influence both.
- Some readers will be from other professions. Economists hardly do interdisciplinary work, yet tackling climate change demands it. Stronger collaborations between climate scientists and economists are fundamental.
- Get in touch with us. On the international level, we are experimenting to see if very targeted international campaigns can break some of the inertia around this. And then, on the national level, [starting in Germany](#), we are building up networks of fellow members of this community to work with departments and institutions to push this agenda forward.

Above all else, become an economist for the future: keep asking whether the profession matches the scale and urgency of the climate and ecological emergency.

Sam Butler-Sloss, Maria João Pimenta and Marc Beckmann.

Economists for Future is extremely grateful to all of those that make our work possible



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