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Discussion of Henry Yeung's "Theory and Explanation in Geography"

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Panel discussion of Henry Yeung's *Theory and Explanation in Geography*

Henry Wai-chung YEUNG[1], Paloma PUENTE LOZANO[2], József BENEDEK[3,4], Andreea ŢOIU[3] and Ferenc GYURIS[5]

Abstract

This paper focuses on Henry Yeung's recently published book with Wiley, *Theory and Explanation in Geography*, discussing it through the lens of an international group of scholars and from various perspectives. On the one hand, the current study aligns with the volume's main message to create and apply mid-range explanatory theories in geography more intensively, rather than relying too heavily on theories imported from other disciplines, such as philosophy, which often overlook different geographical contexts and provide inadequate causal explanations. We also advocate for the conscious promotion of the internationalisation and decolonisation of geography through such theories. On the other hand, the paper examines the challenges and ambiguities of how geographers can become more self-reflective and philosophically educated to develop better theories, as well as how the history and philosophy of geography, as a subfield of the discipline, can contribute to this goal. This study also scrutinises the relationship between proximity, scale, and causality, discusses the book's major takeaways through a Central and Eastern European lens, and, even more broadly, analyses the structural shifts the volume and its referencing patterns indicate in the international practice of doing geographical research during the last half a century. By doing so, the article summarises the conclusions of a panel discussion held in November 2024 at Babeş-Bolyai University in Cluj-Napoca, Romania, the only book launch event of *Theory and Explanation in Geography* to have occurred so far in post-communist Central and Eastern Europe.

Keywords: causality, Central and Eastern Europe, decolonisation, explanation, geographies of science, History and Philosophy of Geography, theory

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On theory and theorising – in geography and by geographers

by Henry Wai-chung Yeung

In this paper, first of all, I will say something about theory: what is theory? Second, I will discuss what to theorise, if you have an interest in theory. Three key considerations are developed in the book as a way of thinking about why and how theory matters. In the third part, I will elaborate on how to theorise, if you really want to theorise about whatever you're studying, and finally, why bother even with theory.

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The main argument of the book is that theory is something abstract. Theory cannot itself be, if you like, the empirical mess that we are studying. For instance, we are studying a bottle of water. That's not a theory, right? Theory is an abstraction of an actually existing reality. Theory cannot be just about words. Theory cannot be just a mathematical formula. Because these are representations of something, that something has to have existed. To me, I don't think there can be a theory of the future because your theory of the future is as good as mine. However, it should be something that we want to talk about that has already happened or is currently happening. So that's what theory is about: an abstraction.

Second, there are many kinds of theory. In the book, I've outlined those kinds of theories I mentioned earlier. Some theories are interpretive – they are only interpretation of certain empirical happenings. Certain theories are meant to be narratives, meaning thick descriptions of empirical events as they are happening. Some theories are predictive in nature – when this happens, that will happen. Some theories are explanatory – all these things happen because of this and that.

Theories come in many different kinds, which is normal. In this book, I wanted to make the case that, in my own reading of at least contemporary writing in the English literature, in geography, we have too few theories which are explanatory in nature.

In other words, we are very good at developing so-called abstract ideas about geographical reality, geographical happenings, and geographical phenomena. But we are not very good at explaining those geographical happenings – that's my own reading and view. If that's the case, then perhaps we also need to consider theories which are explanatory, not just descriptive, not just normative.

In Tariq Jazeel's (2019) book *Postcolonialism* – he is a University College London (UCL) Professor of Geography – he makes the case that even if you do postcolonial thinking, when you are deconstructing colonial discourses, you can still find ways in which those discourses contain some kind of what he calls "representational mechanics". There are ways of representing others, and, in so doing, shaping and creating the reality that we think we are representing. In that sense, even discourses can be explanatory. It's possible.

In the book, I'm really trying to advocate for theories which are not universal, not grand theories, but theories that are non-deterministic. Grand theories tend to be deterministic, meaning the world is like this. So, we are talking about theories that are aimed towards specific social-spatial phenomena, but not necessarily across the entire world. For one, you'll find out why, and in that sense, these are theories which are mid-range – not too grand, not too small, so to speak – but based on relational thinking in human geography and a particular kind of philosophical approach known as critical realism. In its more recent format, this is speculative realism, speculative in the sense that it offers a philosophical understanding of reality based on newer thinking.

So that is what theory is about. The question, then, is: when we theorise, what should we take note of? There are three key considerations.

First, I'm afraid to report that theories cannot be objective, particularly in the social sciences, because we are studying a social reality that is continuously changing and open-ended. The world we live in is not waiting for us to study it; as we speak, the world is changing, and we are part of that world. So, when we theorise about our own world, it is not possible to say that what we theorise today will necessarily be the same tomorrow.

If you think of the tree outside, even the tree grows. A rock, I suppose, remains the same today and tomorrow – depending on the geologic timescale you're considering. The moral of the story is that in the social or human side of geography, it is almost impossible to have what is called an objective theory.

To me, theories are also about why we theorise. We theorise in a way that aims to change the world. This is why we do critical geography: we want to change the world for the better. So the question is: when you theorise, you have to think about where the phenomenon

you are studying comes from. In other words, you must consider the geographical specificity of the theory. For what? What kind of theory? For what kind of social science or geography? On whose behalf are you theorising?

You theorise about something – some phenomena – which might be the result of other actors. In this sense, we are studying subject formation. So, theorising is political; it is not neutral, and it is not objective. Here, I draw on the famous feminist scholar Judith Butler (2015) and her book, *Notes Towards a Performative Theory of Assembly*. In a particular passage I reference, she makes the case that if you want to theorise in an ethical way – meaning you hold a certain normative position and care about what is right – you must think not just of the happenings here or in this room, but also of the happenings elsewhere. When you are theorising the present, the "here", you need to connect it to the happenings "elsewhere" that enable the event you are looking at "here" to happen. In the quotation I give you, the central idea is that only if you are able to understand that the "here" is already shaped by the "elsewhere" do you stand a chance of grasping the difficult and shifting global connections. These connections reveal the transport and constraint of what we might call ethics.

In other words, ethical theories require us to think not just of the "here", but also of the "elsewhere", drawing connections to understand the world in her particular way. However, this does not mean that if theories are normative, all theories are the same because they are subjective and not objective.

Of course, one might argue that a subjective theory is as good as any other. I disagree. I believe some theories are still better than others. Therefore, I am against what is called "epistemological relativism" – the idea that all theories are the same. I am firmly opposed to that view. Later on, you will see why in my third criterion.

The second criterion, which I think geographers will accept more readily than others, is that we need to theorise in ways that take into account the social-spatial context of the phenomenon we are studying. We know very well that place matters. We know very well that the same phenomenon may not occur in the same way in other parts of the world.

Hence, the context in which the phenomenon you are studying takes place is significant – both its historical and geographical context. This means we need to incorporate into our theorisation the idea that the same explanation or narrative may not be applicable elsewhere.

In that spirit, social-spatial contexts are crucial to theory construction in geography. Even if you take a causal approach to explaining geographical phenomena, it does not mean that the same explanation will apply universally or consistently across all contexts.

So, while causal, it need not be deterministic. Here, I take the position that theory is always partial. Our theories can never be complete or universally applicable. There is no way we can develop a "law of gravity" in geography that universally explains phenomena in the same way everywhere.

For example, if you jump from a tall tower overlooking this city, the law of gravity will tell us that you will die. But on the other hand, the theory we develop in human geography is unlikely to work everywhere in the same way. Even though theory is partial, it does not mean that we should stop attempting to develop generalizable ideas. It is still possible to create some generalisations, but not universally across the entire world. Therefore, theory can still explain phenomena beyond the local context.

There are colleagues who believe that because we cannot develop explanatory theories that transcend the local context, we should stick to mere description. While description is necessary in theorisation, it is not sufficient on its own to constitute theory. This is where my perspective differs from Trevor Barnes *et al.*'s (2024) critique (of my book).

The final point I wish to address, which highlights why some theories are better or more useful than others, is the criterion of practical adequacy. Our theories must be practically useful in real-world applications. This is particularly important if you are mo-

tivated by the desire to change the world – whether it be addressing climate change, poverty, inequality, or racial discrimination. If you feel a passion for these causes, that's commendable, but the critical question is: how do you enact change?

To make a difference, you first need to understand what is wrong with the world. If you aim to predict whether the same negative event will occur again, you could rely on very good Bayesian statistics, which can tell you the probability of a recurrence. However, if you want to ensure that the same bad thing does not happen again, you must be able to identify why it happened and how it happened. The "why" and "how" help you understand the causal mechanisms, allowing you to intervene effectively and prevent a repeat of the same negative event.

Thus, explanations for actual social-spatial phenomena are essential if you wish to make positive interventions in the world and improve it. In this sense, the critical realist Roy Bhaskar (2016) argues in his final book, *Enlightened Common Sense*, that there is only one world in which we live, but many varying descriptions of it. Theories and principles of critical realist philosophy should apply to everyday life. If they do not, something is seriously wrong.

This means that our theories and explanations must be tested in both everyday life and specialist research contexts. Our theories must be practical and useful in what we do in the real world. So, in that sense, this differentiates theories that are more useful for what we do every day from those that are less practical.

In Chapter 2, I then proceed by using these three criteria to examine each strand of literature: post-structuralist thinking/geographies, and some of the key theories such as actor-network theory, non-representational theory, and assemblage theory. Additionally, I explore more ideologically oriented or radical approaches, including feminist and postcolonial studies, feminist theory, and postcolonial theory. What does "theory" mean in all of these bodies of work? They are different, and it is necessary to tease them apart.

In the book, I summarise this material in my usual "Yeung-style". If you follow my writing, you know I like tables; I enjoy constructing tables to present concepts in a more concrete way. There are others who write extensively without using any visuals, but I find that approach boring. I prefer tables, and John Agnew, who was one of my book referees, agreed – they're good for teaching. In the table, I summarise the key philosophers, thinkers, and geographers, along with the key ideas, quotations, and the style of theory/theorising within each body of literature. We cover everything: postmodernism, post-structuralism, feminism, postcolonialism, as well as more recent literature from the past 20 years, including post-phenomenology and post-humanism, within the broader context of human geography, critical or otherwise.

This is the nature of the book. Empirical work is necessary; if we want to learn more, we need to do something. But we also need to have something to say about what we are studying that goes beyond surface-level description. For example, we might study why the iPhone is assembled by someone else and use this as a basis to develop a theory.

But if you want to theorise, how do you go about doing it? Are we merely writing in abstract terms? One geographer, Nigel Thrift (2021), in his more recent book *Killer Cities*, uses the term "phiction". He suggests that when your writing becomes too philosophical, it risks becoming phictional – a philosophical phiction. In my book, I used the term "philosophy envy". I think in human geography today, particularly in the English literature, there is perhaps too much grounding in philosophers' writing. I think what some geographers argue is that if our work borrowing from philosophers is that good, why are the philosophers not using our work? Which is also quite true. We use a lot of philosophers' work, but philosophers don't really care about what we write.

In this sense, I think we need to reflect a bit on theory development in geography. Is it just about embellishing with more metaphors? Embellishing more abstract concepts

and ideas that are perhaps really removed from what we study as geographers in terms of what might explain social-spatial phenomena? That's really what we do. If you ask, what does a geographer do? We study phenomena that are geographical in nature. So theory, perhaps from my point of view, can also provide some explanatory power. I mean, it would be nice to have a theory that provides some explanations.

In that sense, explanation requires certain things. If you want to explain something, you almost necessarily have to say why that something has happened. The "why" requires some kind of causal thinking, causation. Something has happened because of something. One day, you become a great physicist because of today's funny lecture here. You become a great Nobel-winning physicist because you hate geography after today. "Be cause". There is a cause that is related to this thing that you're talking about, the fact that you are a Nobel Prize physics winner.

For me, it's useful to think about the "why" issue because (cause), and then how that cause, that causal power works its way through – that's the whole question. If you like the mechanism, the causal mechanism elaborating the why and how social-spatial phenomena take place. And social-spatial phenomena, very broad, anything from gentrification, ghetto formation, poor people being removed from the city centre or the other way around, bank buildings right in the CBD being abandoned, why the Apple iPhone is made by somebody else. Explanatory theories are wanted, but we don't have that many in human geography. For some reason, we have not been very good at developing explanatory theory. That's my own argument.

Hence, in the book, I make the case that what kind of theory for what kind of human geography? Mid-range ones, I think. Because we have been very good in sort of really leveraging on what are called the grand theorists, from Karl Marx, etc. But I think in practical reality, we deal with phenomena that are not the whole world. Phenomena which may be peculiar to Cluj, or even certain parts of Cluj. So, you can actually develop theories which can be very locally and contextually specific.

In this sense, mid-range causal theories need not be only special to us but also in the physical sciences. So, in the book, I make the case that even in the natural sciences, there are people like computer scientist Judea Pearl (2009), writing about causality. Because in the natural sciences, if you know in physical geography, it's important to find out about the facts. When this happens, that happens. The question is, how do you know? This happened, the one that comes later, is the explanation of what comes before that. And for that, you need to figure out the causal mechanism.

To Judea Pearl and Dana Mackenzie (2018, 300), the search for mechanisms, as the quotation goes, is "critical to science as well as to everyday life, because different mechanisms call for different actions when circumstances change". We know the world will warm up by how many degrees, but if you don't figure out the causal mechanisms leading to global warming, then how you can make the right intervention to make sure that climate warming can at least be reduced or even stopped? If you don't know my driving contributes directly to global warming, then how do you stop?

However, in the social sciences, it's not so clear-cut. We cannot isolate the world like in a laboratory setting in natural sciences. We can't ask the world to stop. We can't even stop each other. So you have to study the world then, as the world is happening. Then how do you deal with that?

So when it comes to causality, understanding that the reality exists through objects in the more recent form of philosophical writing in speculative realism, for example, is about the idea of understanding the world as emergent causality. On the other hand, you can still think of how emergence has a certain causal pathway. Even Gilles Deleuze, in post-structuralist writing, used the term "line of flight" (Deleuze, G. and Guattari, F. 1987). There are pathways to how the world is becoming and in so doing you can theorise about that in order to provide explanation.

So, how do you build your explanation in human geography? We are quite attuned to this idea of relational thinking through Doreen Massey's (2005) *For Space*, which makes it very clear in terms of how we can think of relationality in spatial phenomena. In other words, any geographical event is not singular; it tends to be part of wider relations that are happening. But then, how do you make sure that that relationality is explanatory and has some causation?

So this is where the why and how relationality matters. In the book, I went through some detail explaining how we need to think of what's called "power". Doreen Massey (2005) calls this "power geometry" in her relational thinking. And for that, we need to figure out: it's not just about how everything is related to everything else, but it's about how does that relationality work. How does our relationality with each other work out as well?

And in sociology, there is a similar movement towards what's called "processual sociology" by Andrew Abbott (2016), who is a Chicago-based sociologist. Basically, my main idea of theorisation is that causal mechanisms are important if you set it within certain social-spatial context.

But to develop causal mechanisms as a form of theorisation, perhaps you need to trace the processes where certain causal pathways are turned into mechanisms that account for those happenings, and process tracing as a method. I'm sorry, it wasn't in the book. It was in the chapter on method, but my book is already excessively long – 140,000 words. I was given 80,000 words to write, but I ended up writing 140K, so I had to take out that chapter. That chapter has recently appeared in *Progress in Human Geography* (Yeung, H.W. 2024a). So this paper on method, in relation-explanatory geography, came out in September. You can just go and download it, in which I went into some detail about how theorisation of causal mechanisms can also be done through some kind of process tracing, which draws upon political science and sociological thinking. That's the method side. It's not in the book. So just to give you some qualification.

Finally, let me say a few words about why I am doing this thing. So those of you who read the book know that, well, he got nothing better to do after he got woken up from the afternoon nap, suddenly frustrated about the world. And it was the pandemic time, when he didn't know whether he could leave Singapore. Singapore is a city and a country. It's everything. You'll be stuck there for the rest of your life. So what might happen? So, at the end of the day, I was asking myself, but then, you know, we geographers are not very good at explaining this crazy world's happenings. Perhaps we need to think of theorisation.

In my own case, actually, the story went further than that. Far earlier, I have had a long-standing interest in theory. David Harvey (1969, 486), in the book *Explanation in Geography*, ended his book by saying, "By our theories, you shall know us". That "you" doesn't refer to geographers. "You" means the biologists, the law people, the medical guys, shall know us. In other words, we have to produce theories, not just take theories from others and apply them to our geographical analysis. So, fair enough. The question is, how have we been doing since 1969? We have some theories, but not that many. So I've thought it is important to take theory development as our goal as well. Because theory brings us together. It brings knowledge communities together.

Second, theory can also help us contribute to wider social science and other kinds of knowledge development, to explain and deal with increasingly complex world problems. I mean, the world is not getting simpler; it's getting much more complex. Today's world is far more complex than the day when Marx or Weber developed their theories in their time. The world then… at least they didn't have TikTok, no Instagram for them. So they didn't have to deal with the digital. They dealt with everything physical and material. So, we have a much more difficult world, for good or for bad, in which we live, and to do that, to theorise, we need a lot more effort across different disciplines.

Going back to yesterday's question about transdisciplinarity and multidisciplinarity, we

can contribute to theory development. But as I said yesterday, I want us to lead in theory development, not towards the end. When sociologists develop the theory, we use that theory and then we say, "Yeah, geography matters". Yeah, but that's too late. They dominate at the top, and we only add a little bit to it.

So, my own experience, reflected quite a bit in Chapter 6: when I went to Manchester in October 1992 to do my PhD under Peter Dicken, I came from Hong Kong at that time, having graduated from the National University of Singapore. Hong Kong was still a British colony. So, me, as a colonial subject, going to Britain to study with the grandmaster. I asked Peter, "Why is it that we come from Asia, always have to use your theories and then apply them to Asia, and say it works or doesn't work, and then give me a PhD, thank you very much?" And he said, "Yeah, why should that be? I mean, develop your own theory. If not, I won't give you the PhD". So, here I am. That's what I do.

Peter didn't say… "I'm your colonial master, and you're only a colonial subject: of course, you listen to me; I'm the core, you are the periphery". So, in that chapter, I reflected on the idea that we, coming from the Global South, tend to be the data mine, providing the data to the theory mill in the Global North. Why should that relation be? In yesterday's question about the semi-periphery or other parts of the world – in geography, to be fair, it's not that we have not reflected on this. We have, in feminist thought and in post-colonial thought. Gillian Rose, we were just together in Oxford one month ago. Derek Gregory at UBC, Jenny Robinson at UCL, the two of them have been talking about this idea that knowledge is situated knowledge, remember, it's not universal, it's situated in geographical space, specific to the phenomenon. Here.

I give you one quotation. I will not read the whole thing from Derek Gregory's (1994) *Geographical Imagination*. And by the way, you notice all the big names in geography write books with beautiful art book covers. Except this guy. (Him, Henry Yeung.) This guy's book cover has only three symbols from *Squid Game*. And I was watching *Squid Game* (the Korean show) during the writing of his book, and hence the three symbols. You know, theory, explanation, and geography. Geography is a circle, Earth.

What Derek mentioned in his 1994 famous *Geographical Imagination* book is that European high theory – because even Western Marxism itself is geographically specific – has to be considered carefully. You want to bring Marxism into your work? Be careful. Because, according to Derek, for those theoretical ideas, they are invested with their origins, scored by their tracks... So their genealogies need to be interrogated. Their political intellectual baggage declared, and their closures prised opened. This means even Marx's theory. I think when Marx was theorising about the industrial revolution in England, he wasn't thinking of the poor women workers in southern China, was he? Well, China wasn't really industrialising at that time. He was thinking of the textile mills in Lancashire.

Marx's theory is actually geographically specific in his time. You want to bring Marxism into your work? Sure, you can. But be careful, as Derek reminded us 30 years ago. Others, like postcolonial scholar Gayatri C. Spivak (1988), also argue that those of you from the Global South can speak back. In her very famous 1988 chapter, originally published in a collection of Marxist writings, Spivak asks the question: *Can the Subaltern Speak?* Most people read that term *subaltern* to mean the lower class in the Indian context cannot speak. However, what she meant is that the subalterns can speak.

As she owned up in her later book *A Critique of Postcolonial Reason* (Spivak, G.C. 1999), this book revisits the chapter 10 years later. She said that she was unnerved by the failure of communication. In the first version of this text, she wrote it with the accents of passionate lament – *they meant we were very passionate about it*. The subalterns cannot speak. It was an inadvisable remark. She meant the subaltern can speak. She should have been more explicit about it, but when she wrote the 1988 chapter, she never knew the chapter would become so

famous. Sometimes, you don't know. Like a songwriter – you write a song, you never know that song will become so popular.

Edward Said, another extremely well-known postcolonial scholar, also wrote about this in an afterword to his super-famous book *Orientalism*, first published in 1978. In the 1995 afterword (Said, E.W. 2003, 335), he also wrote that the subalterns can speak. As the quotation marks start here: "If you feel you have been denied the chance to speak your piece, you will try extremely hard to get that chance. For indeed, the subaltern can speak". So, whether you are from the semi-periphery or the periphery, we can build theories and theorise back to change what's called the relations of dominance.

For example, Anglo-American thought in geography, like I've been consistently arguing for theorising back for the past 25 years. I was appointed one of the co-editors of *Environment and Planning A* in 2001. I had to write an editorial and I called it "Redressing the geographical bias in social science knowledge" (Yeung, H.W. 2001). Twenty-four years ago, I said, although these two facets of inequality, the bias in social science knowledge, might perhaps have been fine during the good old days of empires and dynasties when the Foucauldian notion of power equals knowledge prevailed, I believe its perpetuation poses a serious obstacle to the development of a truly progressive social science in a post-colonial, globalising era. At the time, postcolonial geography wasn't yet that big. I have had that frustration of why it is that theories of the North will always dictate the empirical work in the Global South. So, I come from that perspective. In Chapter 6 of the book, I reflected on my own experience in the development of the so-called "global production networks theory". I went into some detail to elaborate on how that theory was developed, originally in Manchester, but more formally in Singapore. We developed a particular key concept known as *strategic coupling*. This concept came out of geography. No matter how you Google it, it's done by us. It's not something we borrowed from somebody.

That particular idea of *strategic coupling* even became the title of my 2016 book with Cornell University Press (Yeung, H.W. 2016), to change the view in particular bodies of literature, known as international political economy and development studies, which used to talk about how East Asian development was a matter of state interventions. So, going back to some of yesterday's discussion, we talked about South Korea, Taiwan, Singapore, and today's China, all of which were seen as matters of the state doing this, the state doing that. In my book, published by a prestigious university press, Cornell Studies in Political Economy, I made the case that that literature has its own blind spot. I used the idea of *strategic coupling* and GPN theory to theorise back to that body of work, to showcase that it's not entirely true – that domestic actors can couple with international players and bypass state interventions.

If you're interested, you can look at my recent *Asian Geographers* lecture delivered at the Hawaii AAG in March 2024, which has just come out in the journal in March 2025 and documented in greater detail my own experience in decentreing Anglo-American geography (Yeung, H.W. 2025). So, that's my experience.

Thank you all – to geographers of all shades and kinds. I want to leave you with the last line of my book on page 266. David Harvey said in his 1969 book, "by our theories, you shall know us", as a slogan he wished geographers would pin up on their study walls. Let's make it digital. Please put this on your phone screens and change your home screen to read: "By our explanatory mid-range theories, you shall know and learn from us". I want them to learn from the others.

Theory and theorising from a History and Philosophy of Geography approach

by Paloma Puente Lozano

From the particular perspective of my interest and expertise in the History and Philosophy of Geography (HPG), I take Henry's

book to be the most comprehensive and thorough examination of contemporary post-positivist Anglo-American Human Geography (HG) to the day. And, more significantly, one of the few ones having drawn specific attention to the central role that theory and theorisation have played over the last decades, across the very different trends that we encounter nowadays within critical HG.

This is an important point that Henry's book has made very clear: that theory has proved to be a core and integral element to critical geography, something that otherwise has gone overlooked so far. Put it otherwise: insights about theory in HG have tended to be prescriptive in nature, going along the lines of something like: 'We should develop a theory of this and a theory of that'. Yet the very assumption about the fundamental need of theory in Geography has gone almost unchallenged over the last decades and has not been scrutinised. That is to say that the assumption of the need for theory in HG has not become the object of proper interrogation, even though different bodies of theory have loomed large in HG in a way that their political or ontological operationalisation has turned key to the numerous turns and twists that have swept the discipline.

In that sense, Henry's book is groundbreaking because he mobilises an impressive array of resources (across analytical, conceptual, empirical and normative dimensions) to articulate the sharp and much-needed question of "what does theory fundamentally do to Geography?", and how is that we have come to believe that there is such a fundamental need for theory in an otherwise allegedly empirical discipline. To tackle this question, and to make his case for mid-range, explanatory theory-making in HG, Henry's book offers an analysis of the two major forms through which theory has been established as 'fundamental' to geographical inquiry, namely within self-proclaimed critical approaches.

On the one hand, the book shows how theorisation has been deemed fundamental on normative-ideological grounds, i.e., different bodies of theories have been claimed to have political and ideological potential that should shape and utterly mould the epistemic structure of geographical inquiry so that political change and social betterment can happen.

On the other hand, the book proves how theorisation has been established on ontological grounds, most typically by resorting to anti-fundamentalist stances as variously developed in continental philosophy, which has ultimately predisposed to what Henry calls 'open-ended' approaches to theory-making.

In both cases and yet for different reasons, critical human geography seems doomed to rather unproductive dead-ends essentially linked to the integral role that theory-making has acquired as to having fundamentally shaped HG's epistemic structures. At this point, while I fully agree with Henry's analysis, I consider that further elaboration on said epistemic issues might help to fully draw the consequences of his diagnosis about where things stand in contemporary HG and why it is worth raising the issue of theory-making. Consequently, I would go on to claim that post-positivist critical geography is trapped in a double-bind of sorts. On the one hand, the normative-ideological foundation of geographic theorising has re-built critical geography upon forms of political epistemology which, over the years, have proved to be rather reductionist, uncritical and dogmatic (Blomley, N. 2006, 2007, 2008; Korf, B. 2022).

On the other hand, ontological styles of theory-making are ultimately grounded on what I will call 'self-diminishing epistemologies' that orient geographical theorisation to speculative styles and to forms of criticism consisting of endless rounds of deconstruction. These are practices that cannot ultimately account about their own internal and external limitations without engaging in further rounds of self-deconstruction and self-undermining criticism.

Paradoxically, what we see at play in both cases is that the more flawed (either rigid or unstable) Geography's epistemic structures become, the more theory-making grows and becomes "inflationary", taking up more and more room in geographic praxis. In other

words, there has been a certain overstretching or oversizing of theory-making, either due to the perception of the fundamental "emancipatory" potential that theory assumes under such frameworks (i.e., things need to be "theorised" otherwise because this is key to bring about material transformation); or because of the drive to incorporating more and more "newer" objects, domains or/ and dimensions of the world to geographical inquiry, whether it is the "pre-individual", "elemental", "inorganic", "unsayable", "spectral", "intangible", or "infra-sensible" (the list goes on and on when it comes to post-structuralist geographies). Again, in both cases, Geography (as a field or geographical inquiry as a distinctive 'scientific praxis') seems to fade away as its 'proper objects of study' become blurred, and Geography ultimately disappears, absorbed in and by broader projects of critical theorisation (Geography is transformed into just another form of criticism).

My claim is that this double bind is caused by the sweeping adoption of different forms (and levels) of constructivism in Geography, with almost no alternative to it (except for maybe critical realism, which is integral to Henry's project, but has not been very welcomed in HG: Cox, K.R. 2013). Why this is so, why we are stuck there and why this is central to what is going on today (the lack of explanatory potential in geography theory, amongst other things) is something that is missing in the book. As I read Henry's book, while he makes a very good diagnosis of where we stand today (as critical human geographers), he does not go far or deep enough to explore why this is so and how this is fundamentally connected to previous epistemic trajectories and patterns in HG. One very obvious and sensible reason for this is that he is mostly concerned with making the case for explanatory forms of theory and to probe how that is possible (at least for economic geography).

However, I think there is another reason why he is not taking a more fundamental philosophical approach tackling said epistemic issues head-on. I think this lack of further engagement or elaboration on core epistemic issues stems from what I take to be two important mischaracterisations in the book. So, to discuss Henry's book, I want to take issue with two ideas in the book.

1. The first one is what Henry call 'philosophy envy'. He considers that if we have come to assume that a certain understanding of theory should be integral to geographic inquiry is because of a drive to mimic what has been happening all over in the Human and Social Sciences (i.e., 'theoretical turns' all over).

My point here is that even though I cannot say that this is wrong or false entirely, I consider it inaccurate at best, and unhelpful to bring about a better and deeper understanding of the long-term epistemological patterns of and in Geography. This utter dependency on 'external sources' (Philosophy, as a case in point) is neither new nor specific to contemporary post-positivist geography (it can be traced back to the very origins of Geography and much could be said along similar lines when it comes to the fundamental parallelism between how positivist and post-positivist forms of Geography got stablished).

Therefore, what we are dealing with here is a more fundamental problem about the epistemological constitution of Geography in the long-run and its place in the broader system of science as a whole. This is something that calls for more reflection (not less) and for the need of more (not less) philosophically minded geographers that can cope with, and soundly elaborate on, such long-lasting epistemic problems. We simply cannot get away with them. They are here to remain because they are to do either with fundamental features of geographical issues/objects or with the very nature of Geography as 'science' and the very place it occupies within the broader system of sciences (and, thus, as fundamentally linked to their structural conditions and the transformations that regularly happen in such system). So, no: it is not only philosophy envy, it is something broader and deeper that we need to come to terms with. This leads me to my second point.

2. Henry's mischaracterisation of the non-existing subfield of 'theory of geography'. Certainly, Henry is right when he says that nothing comparable to what we encounter in other Social Sciences (such as "Social Theory", "Economic Theory" or "Political Theory") does exist in Geography or exist to the extent that that can be considered full-fledged and well-established institutional realm.

He claims that this is not the case (which is true: we have a couple of theory-focused important journals; working research groups on HPG, but nothing ultimately comparable to what goes on in other fields). Yet most importantly to my point, he claims that is good that we do not have such a thing as 'Theory of Geography'. However, I fundamentally disagree about what we can expect of something such as an institutionalised subfield of 'Theory of Geography', or a more prominent and active area of HPG.

I guess Henry is expecting that should this be the case, this would but bring about more (flawed) theory of the type that we already encounter all over HG. I am afraid that he is expecting so on good grounds. Nevertheless, and on the contrary, what I would expect of a more institutionalised Philosophy of Geography ("Philosophy", here of course meaning something different and broader from 'theory') is that this would help to bring more history and more philosophically sound elaboration into the reflection about Geography's fundamentals features, objects and difficulties. I do agree with Henry that theory per se (for the shake of theory, to catch up with what is going on in Critical Theory or anywhere else) is a meaningless project, and that we need to bear in mind that Geography is what we are dealing with, and that theory should be subordinated to Geography and not the other way around (which is what has happened in many quarters so far: we have put geographic objects at the service of Theory/Criticism, because it matched ongoing interest in critical theory about space after the collapse of Historicism and Philosophy of History).

However, I consider that this task of "re-centreing Geographic theory" should be understood an integral part of what is to be done in the sub-field HPG. In that sense, we need philosophy (not theory), and maybe better philosophy, provided that such philosophical elaboration on what are otherwise fundamental and structural problems of our field can bring about deep analyses on said (and other) issues. All in all, a more substantive and purposeful philosophical reflection is required – a philosophy of geography that goes beyond the programmatic and prescriptive uses of theory and the hectic styles of mutually contested camps and entrenched theoretical silos which the endless turns and twists (essentially ahistorical) in the field have brought about.

I think that bringing back explanatory styles of theory making is a good starting point and we should be grateful to Henry for having open up this door.

Changing referencing patterns and what they tell us about changing geographies

by Ferenc Gyuris

In my contribution, I will compare Henry's book with another seminal work its title consciously evokes: David Harvey's "*Explanation in Geography*" from 1969 (Harvey, D. 1969). More specifically, I decided to compare the two books by investigating the works and authors they referenced (cf. Gyuris, F. 2025). I hoped such a comparison would tell us much about the changing patterns and geographies of referencing in Geography (mainly Human Geography) between 1969 and 2023. That's because I think a highly important feature of theories in Geography or any discipline is how they shape our practice of doing geographical research to better understand and explain the world from a geographical perspective. While doing the analysis, I regarded both volumes less as the imprints of their authors' individual styles and preferences of reading, using, and referencing literature, even if such individual characteristics certainly apply and may also be the object of research in geographies of knowledge and science. Instead, I considered

the two books highly influential pieces of their own time, which represent and illustrate the structural features and general international conventions of doing geographical research either in the spatial science approach in the 1960s or the more pluralistic and open-ended realities of geography in the early 2020s. Hence, my main interest was the *structural*, not the *individual*.

If you check first how the number of referenced works and authors relate to the length of both volumes, the differences will be remarkable. If you compare David Harvey's 532-page volume with Henry's 336-page book, you will find that the average number of referenced works per page increased from 0.95 to 2.50. Likewise, the number of referenced authors increased from 0.78 to 2.02. It is tempting to argue that such a significant shift may indicate general structural changes instead of individual scholarly habits. The reasons for the shift can be manifold, however. First, do the numbers reflect *shifting concepts of validation* in international geography? So, more references are expected nowadays by the readers and the academic community to accept our statements? Or, and that is the second explanation, do the numbers show *shifting emphases while doing research?* In other words, do we devote, in relative terms, more space to literature analysis and less to our own contribution? Is that a sign of a deep structural change in academic work that we feel important to much more closely reflect upon ongoing scholarly discourses and locate our findings *relative to these discourses* than just presenting results about a topic we are personally interested in? And I think that's the point where I really must refer to Henry's comment on the *"philosophy envy"* in Geography (Yeung, H.W. 2024b) or *"phiction"* as Nigel Thrift (2021) put it. Alternatively, as a third explanation, do the numbers reflect *shifting habits of reading and using literature?* I mean, do we tend to refer to a larger number of publications but take less information from each, as an understandable strategy in our contemporary scholarly world pushing all of us towards *fast reading, fast publishing* and *fast referencing?* I think these questions will be important for future research. They could probably also add "practice" to the title of a future seminal book: "Theory, Practice and Explanation in Geography".

In the next step, we may take a closer look at the authors referenced in both books. In David Harvey's 1969 title, each referenced publication had 1.16 authors on average. In Henry's 2023 title, the same value was 1.47. That indicates an increase in the share of multi-authored publications, which is a general trend in contemporary academia. However, the numbers show that single-authored publications are still crucial in Human Geography. That is not just the proof of our discipline's peculiarity relative to many other disciplines, especially in natural sciences. It is also powerful feedback that despite the changing disciplinary expectations in global academia, writing single-authored publications, including monographs, remains a valuable activity that can shape agendas in Human Geography.

In another step, we can differentiate between authors with only one or two referenced publications on the one hand, and authors with three or more referenced publications on the other hand. Remarkably, the share of the second group increased from 8.7 percent in 1969 to 16.9 percent in 2023. The shift is even more striking if we check the share of these authors' publications among the total number of references. Then, the share will increase from an already remarkable 33.5 percent in 1969 to an incredible 66.4 percent in 2023. These numbers show that references and, probably, academic literature in Human Geography are increasingly dominated by a few highly prolific and influential scholars whom we may call "rockstar geographers". That is in line with several other studies' findings on the functioning of neoliberal academia and the uneven landscapes of academic attention. I'm talking about structural questions, not about individual preferences. We all have our contexts, geographical, institutional, financial, and we must survive. Or, at least, we want to survive. If we don't, we are not here now.

In Harvey's 1969 book, Brian Berry took the lead with 17 references, followed by Michael Dacey (15 references) and, after a remarkable gap, Richard Chorley (8 references). In Henry's book, the works of Henry himself and Jamie Peck are on top with 30, eventually 21 references, and several authors have more than 10 references, namely Andrew Sayer, David Harvey, Nigel Thrift, Ben Anderson, Peter Dicken, Doreen Massey and Bruno Latour.

Another remarkable feature of references is that the most referenced authors, with 3 or more references each, which included 37 authors in Harvey's book, included no women at all, indicating that geography in the late 1960s still was a predominantly "male business". Henry's book's according value increased from 0.0 to 24.3 percent, and 20.8 percent of all references went to publications from female authors and co-authors. That is a significant increase. Nevertheless, gender ratios still move within the range of 3 to 1 to 4 to 1, which still indicates a high degree of gender inequality in the functioning of global academia in our discipline.

What I would also like to emphasise here is that Harvey referred to quite a significant number of works from physical geographers. That's remarkable how the share of physical geographers has declined in our discourse about theory, explanation, whatever in Geography, which is increasingly becoming interpreted as Human Geography somehow, which is again of course related, in my view, to ongoing remarkable processes and dynamics in global academia.

Finally, as a geographer, I aim to analyse what we may call the "geographies of referencing", or, the geographical background of referenced authors. That is still research in progress, where I managed to investigate the institutional affiliation of all referenced authors in Henry's book by countries and, for Harvey's 1969 volume, the place of birth of authors with 3 or more references. Although comparing these numbers means comparing apples to oranges, due to which we should be very careful while interpreting the results, I think they can reveal some actual, even if rough, patterns. Central and South America, Africa, and Asia (except for Turkey) were absent in 1969, whereas they all appeared in 2023 with some countries at least. That is a significant change we must emphasise as a positive sign of the decolonising and internationalising of Geography. It should not be ignored, though, that the numbers still reflect a firm Anglo-American, especially British dominance in international Human Geography. The share of the UK is still 37.0 percent, followed by the US 23.6 percent. We can also see that the share of US works decreased much more significantly between 1969 and 2023 than the share of UK publications. However, we should remember that David Harvey, although born in Britain, already worked in the US while writing his seminal book in 1969. In contrast, Henry's academic trajectory has been much more linked to the UK and Singapore as two Commonwealth member states.

It is also remarkable that the former Eastern Bloc remains highly invisible in both books – a shortcoming we and many scholars in the post-communist region must work on, and we should carefully think about "What can we do?". I believe the analysis also emphasises the importance of thinking about the world not as a two-tier system simply made up by the Global North and the Global South, which the countries of many of us will not fit well. Instead, I support thinking about the world as a three-tier system, including the core, periphery, and the semi-periphery, which is quite an exciting category itself. Anyhow, I am here to make comments from a country from the former Eastern Bloc, and I agree with Henry's point that it *is* possible to speak. It is also possible to speak back if you want.

Proximity, scale, and causation

by Andreea Ţoiu

My research problematizes the concept of proximity, addressing it as a scalar, dynamic concept that contributes to the constitution of

spatial hierarchies and global socio-economic relations. In this regard, Chapter 4 of Henry Yeung's book has provided me with a profound understanding of relationality and the causal powers operating within what he calls *"relational geometries"*. These geometries are not simple configurations of social relations. Instead, they are dynamic processes through which power and identity become effective, influencing how knowledge and resource flows traverse space.

One of the key merits of Henry Yeung's book is his epistemological commitment to understanding geography as an explanatory, not merely descriptive, science. And it allows me to articulate how proximity functions not just as a physical attribute but as a process that compresses and expands space. Proximity, in this way, builds bridges that transform places into strategic nodes within global networks.

Yeung' s idea of framing relationality in terms of causal powers clearly and convincingly explains why and how proximity generates unequal socio-spatial outcomes. And I noticed this paradox of interconnected injustice, how unequal and unfair the geographical realities are, but still in a constant connection. As Doreen Massey (1994, 146) says that *"no matter how unique a place may be, it is a meeting point, an intersection of global flows and networks of social relations"*.

Another central aspect of Henry Yeung's work is the clear and well-argued distinction he makes between mechanisms and processes, discussed in detail in Chapters 3 and 5. While many contemporary approaches tend to conflate these concepts, Yeung demonstrates that mechanisms are necessary causal relationships that generate concrete outcomes in specific contexts. This clarification is essential for me. It provides the tools I need to analyse proximity not just as a descriptive given but as a specific causal mechanism, integrated into spatial scalarity and the dynamics of global knowledge flows. Through this epistemological clarity, I now have a solid methodological foundation for explaining the hierarchies and inter-scalar processes embedded within global networks of production and innovation.

The book also emphasises the importance of explanatory theory as an alternative to descriptive accounts and predictive models. Through his GPN 2.0 (Global Production Network) theory, Yeung demonstrates how the mechanisms of organisational networks can explain unequal socio-spatial outcomes across various regions of the world. This theory provides a valuable analytical framework for understanding how knowledge and resource flows shape socio-economic spaces in diverse yet interconnected ways.

In my research, this approach helps me explore how proximity is shaped by the interaction between global and local actors, integrating heterogeneous power relations and contextual mechanisms into the analysis of geographical scalarity.

For me, *"Theory and Explanation in Geography"* is more than just a theoretical work. It is, in fact, an essential guide for building research that truly matters. By clarifying the relationships between proximity, scalarity, and causal mechanisms, this book helps me articulate and explain the complex processes I investigate.

Henry Yeung succeeds in offering a vision of geography that not only describes reality but also explains and transforms it. This is the inspiration that drives me forward in my academic journey, motivating me to contribute to a deeper and more nuanced understanding of global socio-spatial dynamics. Thank you!

Takeaways from a Central and Eastern European perspective

by József Benedek

This book presentation and conversation can be considered a historical moment at least for two reasons: (i) the Faculty of Geography (Babeș-Bolyai University, Cluj-Napoca, Romania), celebrates this year 30 years of existence since the Geography Department has separated from the Biology-Geography-Geology Faculty in 1994, creating the most

comprehensive Romanian higher education institution in the field of Geography; and (ii) the Faculty of Geography in Cluj through its Research Centre for Sustainable Development organises for the first time to my knowledge a book presentation for an internationally top ranked geographer as it is Professor Henry Yeung. It speaks not again of our institution's internationalisation level, which is fair enough, but rather of the lower sensitivity and reception, until this very moment, for this special type of professional debate represented by book presentations.

The importance of this moment is even more enhanced by the fact that *Theory and Explanation in Geography* is the only recently authored academic book on theory and method in geography. This kind of Theoretical Geography was also my favourite in 1989 when I started to study geography, and although I passed the first-year exam on Theoretical Geography with the best mark, I fully understood the content only four years later, at the end of my study time. And somehow, after many decades, I came back again to this discipline for seven years in the position to teach Theoretical Geography, or "General Geography", as it is called officially for undergraduate students, a discipline not among the student's favourite ones. I mention all these details only with regard to the audience of this book presentation and to underline the difficulties of generating a coherent discourse on this topic with clear and understandable arguments for all levels of the geographical community.

However, reading this excellent and ground-breaking research monograph implies solid foundations in social theory and epistemology as well. So I am very thankful to have this opportunity to lecture carefully on the book and, in doing so, to re-read parts of some older texts, from which my favourites are Derek Gregory's *Geographical Imaginations* (1994), and Benno Werlen's *Gesellschaft, Handlung und Raum* (1987), less known for the English-speaking world although translated later into English (*Society, Action and Space*, Werlen, B. 1993).

In my view, the reading of this opus magnum authored by Henry Yeung offers the readers the following crucial takeaways:

1. A rigorous and critical interrogation of key theories and perspectives of critical human geography like actor-network theory, postcolonial theory, non-representational theory and so on, pointing at their limits in theory and practice. It is not an easy reading, but well documented, offering an excellent overview of the fragmented and complex critical human geography literature. This overview is especially welcome for the readers of Human Geography in Central and Eastern Europe (CEE), where historical materialism was largely discredited by the experiences during the communist regimes before 1989, depriving the geographical community of one of the major sources of theory-building in the afterward of the regime changes following the collapse of communism in 1989.

2. Solid arguments for explanatory mid-range theory in geography. This argumentation comes timely, as Geography established itself as a theory-importing science, ending or finishing grand theories developed in economics, sociology or natural sciences with their socio-spatial contextualisation (institutional theory, evolutionary theory). I can still remember important texts calling to generate theories or even laws in geography, like the first law of geography by Waldo Tobler, postulating that near things are more related (Tobler, W.R. 1970) having resonated strongly in geography (Miller, H.J. 2004). However, as a discipline, we failed to generate a second or third law. Or was it the failure of Waldo Tobler?

I should point here also on the reverse side of theorising in geography. It is the case of developing theories with no empirical validation. I remember my times as PhD student at the Institute of Regional Geography in Leipzig in 1996 when I assisted at a presentation of Benno Werlen, arguing for a new theory on geographical space and regions, who failed later to produce solid empirical foundations for his magnificent and captivating three-volume work *Social Geography of Everyday Regionalisations* (Werlen, B. 1995, 1997, 2007).

When I was a sociology student, I sympathised a lot with Robert K. Merton's more limited mid-range or middle-range theories (Merton, R.K. 1968). At that time, I thought and still think they were very geographical in some sense. These middle-range theories are much closer than grand theories to the observed behaviour in a particular socio-spatial setting, so they are more appropriate to explain geographical processes.

3. Advocacy for a theory that should be explanatory and for geographical explanation that should be grounded in theory. The ultimate goal of the author is *"to stimulate more and better theorising and explanatory work in our discipline and for the wider social sciences"* (p. 3), since *"Theory is what defines an academic discipline"* (p. 2). It is a call that comes timely to our socio-spatial context in CEE, where strong voluntary empiricism and technological overenthusiasm generated by the general advancement in spatial technologies like GIS or remote sensing have caused a neglect of theories, a division by theory and method. It is the grand merit of Henry Yeung's book to bring back at the core of geographical thought the topic of how to build theories, recalling and echoing also on the – at that time positivist – David Harvey's grand statement from 1969 that *"By our theories you shall know us"* (Ch.1, p.1). And indeed, paradoxically, Harvey was right: we are known as weak theory developers and good theory-importers and theory-adopters and integrators, or even more as solid interpreters of geographical phenomena or vocal deconstructors of all sorts of representations.

4. Arguing for a mechanism-based thinking informed by critical realist and relational thought, enabling Geography an explanatory mission, not no neglect taking into account the new forms of geopolitical, public health, disruptive technologies driven risks, the new geopolitically driven economic policies, the environmental and sustainability issues, the 'double exposure' (complex connections and interactions between global climate change and globalisation of economic activities) emerged during and following the Covid-19 pandemics. This is an argument for a new theory and explanation to better account for some major transformative changes (cf. Benedek, J. and Ţoiu, A. 2025). I would I would label and rephrase this idea of Henry as a kind of engagement for a new mission-oriented Geography.

Beyond these important contributions, I also have my doubts and questions related to some core concepts like the mechanism-based explanation, which considers the socio-spatial context for theory building. I think a more dense explanation of concepts that are at the core of the Geography like "socio-spatial context", "space", "place", "region" or "mechanism" would be beneficial for us all. Against this background, a significant takeaway is to always keep in mind some the following questions: (i) How can we define the *"socio-spatial context"*? (ii) Does the socio-spatial context include the economic context as well? (iii) If yes, can we reformulate it as a socio-economic and spatial context? (iv) What is our understanding of the spatial context? (v) What exactly is our understanding of the relation between socio-spatial context and mechanism?

Discussion and conclusions by Henry Wai-chung Yeung

To Paloma Puente Lozano

Paloma mentioned two major issues in my observations: the concept of philosophy envy or the idea that we have gone too philosophical. Her argument is that perhaps we need to reflect more on theory, and, as a result, we may need more philosophical reflection rather than less.

When I make the case for philosophy envy, the way I frame it is not to suggest that we should refrain from engaging in philosophical reflections. Even in my own writing and critique, I draw extensively on different kinds of philosophy, as well as the philosophy of social science and science, in order to develop our understanding of what theory means and what concepts mean. I used the term

"philosophy envy" to remind us that, for example, relying on continental philosophers' work does not necessarily replace the task of conducting actual geographical analysis. This is ultimately what we should focus on. Philosophers cannot perform geographical analysis for us, just as we cannot perform their philosophical work for them.

In the book, I argue explicitly that philosophers clarify certain misconceptions about the world, which is ontology, while we deal with the actual realities they philosophise about. In this sense, I think there is a division of labour. We should remain a kind of empirically grounded social science, or engage with physical geography or natural sciences. On the other hand, I will not shy away from engaging with philosophers. However, we must keep in mind that this engagement alone does not grant us the ability to overcome our own limitations. That would be my first response.

Second, and this is an interesting point. I mentioned that in Human Geography or Geography, we do not really have a field called geographical theory. We do not have journals titled *Geographical Theory.* In Political Science, there is *Political Theory.* In Economics, there are *Economic Theory* and *Journal of Economic Theory,* two top journals in that field. In Sociology, there are journals with similar titles, such as *Sociological Theory.* However, in Geography, we do not have a journal called *Geographical Theory.* It simply does not exist.

I also mentioned in the book that this is actually a good thing because I cannot imagine what we would call "theory heads", people who only do theory. Very few such individuals exist in our field, and I do not encourage us to pursue that direction. Although, in other disciplines, there are people who focus exclusively on theory. That would be my understanding and preference. However, I think Paloma's point is that we do need to think about the theory of Geography. In other words, I somewhat support your view that we must still engage with those who develop theory within Geography. However, I do not believe we need an entire field dedicated to it.

I think you are probably arguing from the perspective of the philosophy and development of geographical thinking and thought. From that point of view, I agree that we must continuously reflect on our theoretical practices in Geography. However, I believe we share some common ground in that we should not have individuals who only do theory for theory's sake.

That is essentially my position. I think there is more agreement between us on the second point and, perhaps, even on the first.

To Ferenc Gyuris

My reflection on Ferenc's four key observations is as follows. First, at the time when Harvey wrote his book, the difference between the two books is obvious. Harvey's book was written to champion, essentially, a positivist vision for Human Geography. Of course, in the context of the quantitative revolution in Geography, his main adversary at the time was descriptive regional geography. This was the era of Richard Hartshorne and *The Nature of Geography (Hartshorne, R. 1939).* There's also the British response to that issue. Harvey had a singular vision, and much of his book is focused on different techniques and approaches to conducting positivist explanatory analysis.

My book, however, is different in the sense that I examine the epistemological faults in our community. Additionally, there are far more practicing geographers today than there were in the 1960s. By definition, Harvey had fewer people to cite, even if he wanted to, whereas I have far more sources available.

Second, I have no idea about the sociological aspects surrounding the production of Harvey's book. It is possible that, in his time, books did not require reviewers. Who knows? Back then, you might just get a book contract, write, and publish. In my case, I have to consider my reviewers carefully. As someone who is, in many ways, an outsider – an "essential outsider" to British

Geography – this adds complexity. Although I was trained in Britain, I have spent three decades of my career outside the UK. So, I am an outsider with some connections, and I must keep in mind the people I write about and refer to in my work.

This, fundamentally, explains the vast differences in citation patterns. I was very mindful of issues related to gender, ethnicity, and geographical representation. It is true that there were very few references to authors based in Central and Eastern Europe. I cannot be certain about the backgrounds of some authors in the English-speaking world who might be from Central or Eastern Europe, but I did not explicitly think about that aspect. This might account for the observed differences.

In terms of authorship and the concept of "rock star" authors, my list of the most cited key authors appears to be quite balanced between Harvey's time and my own. Regarding citations to myself, most appear in Chapter 6, which is focused on theoretical reflections about GPN Theory. If you remove Chapter 6, I would probably have only one or two self-citations. Jamie Peck has more citations, but then you have the other major figures. For Harvey, Physical Geography was central because he was trying to bring Human Geography closer to Physical Geography. In my case, it's the opposite.

One of the referees suggested calling the book *Theory and Explanation in Human Geography*. However, I avoided emphasising the term "human" because I wanted the book to remain relevant even for GIS and Physical Geographers who adopt a critical view of explanatory approaches, including those within Physical Geography. That would be my response to your comments.

To Andreea Ţoiu

I believe that, in terms of Innovation Studies, it is really useful to recognise that innovation, by definition, cannot be achieved by a singular individual, firm, or entity.

Drawing on the point that some of the relational thinking in the book may help you further develop your work and contribute to Innovation Studies, I think that is a great outcome to anticipate. I didn't really have Economic Geography spill-over in mind when I wrote those parts, as the book was not specifically written for Economic Geography. However, I am glad that you have taken a very insightful Economic Geography perspective on the book.

To József Benedek

József's two questions essentially revolve around the difference between context and mechanism and, secondly, what this says about Geography as a so-called spatial science.

First, when we say "context matters", does that imply Geography doesn't matter? The idea that Geography matters is not a blind statement. For example, Doreen Massey had an edited book titled *Geography Matters!* (Massey, D. and Allen, J. 1984). However, when we tell other social scientists or anyone outside our field that Geography matters, it is not enough. It is important to go beyond the phrase "Geography matters" and explain how it works.

To me, Geography matters because place and space do more than provide context – they can actively alter economic, political, and sociological processes. Economists study economic processes, political scientists study political processes, and sociologists study sociological processes. However, when these processes pass through space and locate themselves in specific places, their characteristics and causal powers can change. This is where the argument that "Geography Matters" shapes the abstract, generic processual thinking of the broader social sciences.

For example, consider the metaphor of wind blowing through mountain ranges, such as those in Transylvania. The same wind behaves differently as it passes through the mountains – its characteristics change. While this is a physical metaphor, and we are discussing social processes, the principle is analogous. Similarly, sociological pro-

cesses passing through space and different locations can undergo changes. This is my conception of how Geography matters.

So, where does context fit in? Context could refer to the specific location where a sociological or political process changes. In that place and in that way, things are different. Historical context, on the other hand, refers to a particular time frame. The same process may manifest differently depending on the combination of various factors present at that specific time, which we might call conjunctural.

This brings me to the distinction between social-spatial context and causal mechanisms. Causal mechanisms involve elaborating on why and how things happen, often without considering space. However, space is more than just a context – it can also be causal. This distinction requires more detailed elaboration to convince you fully of the difference between context and mechanism.

Secondly, geographical space is not just context – it can also be causal. However, this is not always the case. That would be my response.

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The ironic misfortunes of 'geographic theory'. Sceptic musings on a sexy oxymoron

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Abstract

In this short piece, I engage with Henry W. Yeung's (2024) diagnosis of a 'philosophy envy' affecting contemporary human geography to partially support his interpretation and equally argue against it. While I read geography's infatuation with changing philosophical vogues as resulting in a deleterious *theoretical hubris*, the reasons for the academic and political pedigree that prevailing forms of geographic theory have purchased require a deeper epistemic scrutiny (and perhaps also a bit of spoof) than Yeung's book allows for. Consequently, after preliminary derision of globalised scholarly infatuation with theory-making, I turn attention to two features of the epistemic structures underpinning mainstream critical geography, namely, constructivist schemes and parochial modes of justification, briefly taking issue with both. I end with a final coda about what could be expected of Theory of Geography as a subfield, calling simultaneously for a more substantive and purposeful philosophical reflection in geography and a sceptical take on theory to curve down its pure vanity.

Keywords: geographic theory, critical geography, critical theory, philosophy, book *Theory and Explanation in Geography*

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The magnificent *feu follet* of theory

At the beginning of his compelling book *Le démon de la théorie* [The devil of the theory], French literary scholar Antoine Compagnon wittily states: '*La stagnation semble inscrite dans le destin scolaire de toute théorie*' (Compagnon, A. 1998, p. 9) ['Stagnation seems to be the scholarly destiny of all theories]'. And then he goes on to rub salt into the wound: '*L'appel à la théorie est par définition oppositionnel, voire subversif et insurrectionnel […] la fatalité de la théorie est d'être transformée en méthode par l'institution académique, d'être récupérée, comme on disait*' (Compagnon, A. 1998, p. 15). ['The appeal to theory is by definition oppositional, even subversive and insurrectionary [but] the *misfortune of theory* is to be bound to be transformed into a method by the academic institution, to be co-opted, as we used to say'. Emphasis added].

Certainly, his assertion should be read against the backdrop of the peculiar and long-lasting link between university and secondary school teaching recruitment system in France, which rapidly turns highbrow epistemic exquisiteness (whether produced through the mercurial blossoming of sophisticated theories or through the churn of methodological innovation) into a well-established repertoire of formulas, recipes, phrasings and oven-ready statements fit for success in national examinations. And yet as French as Compagnon's malicious assertion might sound, it sheds light on the different fortunes that French philosophy and literary theory have undergone at home and in the Anglo-American academic culture (Cusset, F. 2003). But it does so in a very paradoxical way, for the predictable stagnation of said theoretical flares that so overtly revealed itself at home, has become true in the global

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academy through the twisted form of an ever-growing proliferation of exotic theoretical finery. More is less! So just as counter-cultural movements dazzlingly fuelled consumer culture back in the 1970s (Joseph Heath and Andrew Potter's book, *The Rebel Sell: Why the Culture Can't Be Jammed*, made the point decades ago), the handful of theorists who have risen to global celebrity in the turn of the century have been every bit as co-opted and commodified as preceding critical masterminds. What a destiny, becoming an amusing face on a water bottle sticker!

For sure, geography has not been an exception when it comes to these matters – quite the opposite: stickers have even been analysed as part of 'urban geographies of resistance' (Awcock, H. 2021).

After some exciting and somehow hectic decades of critical-cum-theoretical endeavours in human geography (Dixon, D. and Jones III, J.P. 2004; Creswell, T. 2013), we may still be waiting for the dust to settle (much ado!). Nevertheless, we would be wise not to underestimate the demon of theory, for it can well be the case that some irony awaits us around the corner: stagnation, rather than being the future that lies ahead of us turning eventually theory into boredom, seems to lie instead at the very centre of mainstream theory-making and manifests itself in the form of a nagging acceleration of scholar productivity which keeps fanning the flame of never-ending novelty.

Put it otherwise: the unleashed theoretical frenzy that has swept across some quarters in human geography and elsewhere could be claimed to be but a particular expression of stagnation. This should come as no surprise to anyone familiar with contemporary characterisations of the nature of our times, as late, super- or hypermodernity have been variously predicated upon such a relentless acceleration of many modern phenomena (Dardot, P. and Laval, C. 2010; Rosa, H. 2015; Gumbretch, H.U. 2014), whose acute exacerbation dooms the epoch to be an ever more ludicrous sequel of itself, with stagnation and acceleration being the two sides of the same coin.

Accordingly, in the critically-minded but highly commodified academia theoretical hyperactivity evinces ill-concealed stagnation, which takes place under the various forms of marketisation, mainstrimisation and academicisation of critical approaches (Castree, N. 2000; Oswin, N. 2020); increasing epistemic extractivism and expropriation of recently-released-from-the-Global-South's (or far-flung 'exotic places') concepts and terms (Halvorsen, S. 2018); or citationary alibies and respectability politics (Roy, A. 2020) that entail a formal *habitus* which re-inscribes academic dependency and the coloniality of knowledge (Schöpf, C.M. 2020) in emancipatory talk.

All of them are visible signs of a constant quantum leap within a theoretical loop continuously spiralling out of control and awkwardly trying to escape its own incongruities, as if the most visible (rewarded!) part of the global academic bubble were now populated by such hilarious 'sleepwalkers' at whom Hanmett, C.R. (1997, 2001) poked fun almost three decades ago following Neil Smith's academic hoax (Smith, N. 1996).

The 'global conversation' (isn't all this to and fro of travelling theories and formulas happening in worldwide premiere journals?) threatens to turn itself into a huge black hole that falls prey of its own rhetoric practices and the performative *hubris* of ground-breaking conceptual whims – even more so when it expresses itself in the form of either hypervigilance about the vices and sins inherent to one's own (privileged) positionality (Savolainen, J. *et al.* 2023) or a constant call for theorising back at Western conceptual, thematic and epistemic hegemonies – and yet aren't people elsewhere busy with more interesting things than feeding such 'global conversation' anyway?

But just when it seems that we are about to eventually assume that all this business of endless repetition of gestures of self-suspicion or self-deconstruction is but a 'meaningless piety'(Spivak, G.C. 1988, p. 271) destined to become a frantic yet routinely performed exercise of innocuous scholasticism, theoretic inventiveness strikes again with a new cunning

tour de force (a sort of *Theoria ex machina*, one would dare to say) reinvigorating the old faith in the beneficent qualities of verbose theory.

Accordingly, hot-on-social-media globalised theory has now come across as the new object to denaturalise, unmask, re-world, provincialise, decentre, dislocate (the list could go on for a while), turning, thus, intellectual life into a special case of '*servitude volontaire*' [voluntary servitude] – an obfuscating epistemic regime incapable of knowledge production outside of the remit of *theoria recepta,* dull self-referentiality and the formats, moulds and moods of global consumption and, therefore of translatability and various travelling requirements and compulsions.

Were it not for the unfathomable proliferation of academic silos (aka 'epistemic communities') and the ensuing need for esoteric initiation into their languages and *arcana*, one would be tempted to say that the only decent task left to the well-established globetrotter scholar (youngsters: don't even try!) is to devote himself to writing arresting hoaxes and erudite satires which carefully dress up straw men – and of course to chase love, prestige, and fleeting glory across the world's interconnected circuit of conferences – à la David Lodge. Nonetheless, it is no secret that neither the inane polarisation and intellectual barrenness that fighting cultural wars (seriously or playfully) leads to, nor carrying on with one's business, as if everything were still the same, will be of much help in coping with 'the degrading slavery of being a child of his age', as Chesterton has had it. This present age cherishes theory – which is bad news for theory, for any type of theory indeed.

Yet theory is always hard to beat – it always works theoretically anyway.

Against this background, it would be worth discussing to what extent such standing of *theoria recepta* in human geography is to be attributed to what Yeung, H. (2024, p. 12) calls 'philosophy envy' in his recent work *Theory and Explanation in Geography*. The book can be easily claimed to be the most comprehensive and thorough examination of contemporary post-positivist Anglo-American human geography to the day, for it does spare no details when it comes to present, organise, analyse and critically explore those major works that are commonly assumed to be 'geographic theories' of one kind or another.

More significantly, it is one of the few works having drawn *specific attention* to the *central role* that theory and theorisation have played over the last decades across the very different trends that make up contemporary human geography (it should go without saying, following the preceding pages, that an a-theoretical human geography can no longer be considered 'critical', no matter how much it actually might be).

That theory has proved to be a core and integral element in the (f)actual functioning and practice of critical geography is something that has gone overlooked so far or has not been the object of thorough and systematic examination – at least until recently, when some geographers have started to discuss the consequences of the uses and abuses, the 'seductions and distractions' (Lake, R.W. 2025a, p. 9) of theory-making in geography (Davidson, M. 2025; Tonkiss, F. 2025).

Certainly, the recent history of the Anglo-American crafting and global circulation of 'French Theory' (Cusset, F. 2003) is very telling in this regard and later episodes of 'Italian Thought' (Chiesa, L. 2014), as echoed in human geography (Minca, C. 2016), or subsequent pleas for 'German Theory' in critical geography (Korf, B. 2021) apparently come to confirm Yeung's diagnosis of a certain 'envy' of the theoretical gotcha.

Furthermore, such episodes (and their concomitant material circumstances and intellectual routines) make it possible to predict the upcoming success of, let's say, 'Brazilian spatial thought' after the English translation and dissemination of works by Milton Santos (Melgaço, L. and Prouse, C. 2017) or an 'Asian Theory' that aims at theorising back (Yeung, H.W. 2025) at Anglo-American onto-epistemic cores. The model is far from losing momentum, and it seems to be destined to repeat itself – provided that the basic equation between *theory* and *criticism* can remain unquestioned. The model is

fairly well established, in any case. 'Theoretical interventions' have turned into critical moments *de rigeur*, and when those come peppered with a few drops of geographic fetishism to gain further traction and charm (i.e. for theory to become more 'plural', 'inclusive' and 'multilingual'), success is guaranteed – well, here I am, isn't my broken English just lovely?

In the same way that 'Zulu nationalism' was listed in the famous and far from comprehensive long inventory that I. Hacking made of the kinds of item that, in addition to facts, knowledge and reality, have been claimed to be socially constructed over the decades (Hacking, I. 1999, pp. 1–2), theoretical gloss is destined to shine brighter and brighter under the shimmer of enticing and evocative places that have not yet been fully absorbed by hegemonic cores and bubbles.

The proof is in the pudding: Spanish philosophers have been lately asking 'Why there is no Spanish Theory'? (Valdecantos, A. 2025), a question that can only be read as either a tormented baroque sigh or a sarcastic settling of scores with theoretical vogues and their underlying meagre understanding of intellectual labour.

Accordingly, if a large part of geographic scholarship's turns, twists and breakthroughs now seem to be the result of a ubiquitous *Theoria ex machina*, Yeung's diagnosis of contemporary geography's fundamental 'philosophy envy' could be given some credit. Many examples of such a need to catch up with broader patterns of academic capital production will spring to mind for geographers, not the least years-long efforts to turn Foucault, Lefebvre, Deleuze & Guattari (or whoever French thinker were called for in each case) into 'spatial thinkers' now looming large in human geography dictionaries and textbooks. Significantly, Yeung's book devotes an impressive number of pages to analysing problems and limits of the kind of theoretical production that has taken place in human geography under the well-known formula of Wittgenstein (or Kristeva, or Levinas, or …), 'whose challenging and thought-provoking writings remain largely unknown within our discipline'. (As an example of this Harrison, P. [2002, 2007], or Fleischmann, L. and Everts, J. [2024] can be pointed out. Following the long list of French philosophers mobilised in human geography, still showing a high performance therein, as is the case of Blanchot [Carter-White, R. *et al.* 2024], or Derrida [*cultural geographies*, 2008], a recent plea for 'German Theory' in geography has brought to the fore philosophers such as Sloterdijk [Ernste, H. 2018], Adorno [Marquardt, N. 2021; Philo, C. 2021, 2025], or even less-known-worldwide Plessner [Korf, B. 2021; Ernste, H. 2023]).

It is precisely this particular way of understanding theoretical production (and the critical purchase of such scholarship) that is the object of Yeung's major criticism. Even though in the book the distinction between post-whatever inspired geographic theory and more 'classical' forms of ideological-political theory-making (e.g. as in radical geography) is central to the definition of critical styles, both of them are rejected as not having been able to produce 'explanations' of the phenomena at hand (no matter how much theoretical elaboration has been bestowed upon such phenomena). And that is what ultimately drives Yeung's interest and criticism.

Geographen aller Länder, vereinigt Euch – Let's shake off the shackles of philosophy!

With such goal in mind, Yeung's *Theory and Explanation in Geography* opens fire, raising a bold question: 'Are these critical theories really theory as their names so pompously suggest?' (Yeung, H. 2024, p. xi). The title's echoing of the famous Harvey's *Explanation in Geography* (1969) makes the reader suspect that the aforementioned question is a rather rhetorical one, for the book's underlying assumption is that whatever may be expected of or requested from any *proper geographical theorisation* cannot be set out in terms of what philosophy (or any other discipline, for that matter) takes theory to be, e.g. speculative thought, philosophical the-

matisation of this or that, etc. Accordingly, Yeung's book stands as a 'liberating' cry from the philosophical enslavement to which geography has subjected itself.

Curiously enough, the book does not contain a key guess that could be ultimately conveyed to make the case for the 'philosophy envy' argument. Perhaps such a guess is too much of a taboo among geographers to appear in a geography book. I would argue, though, that the ever-tighter Gordian knot of contemporary geography's dependency on *theoria recepta* lies in the fundamental equivalence that the terms 'theory', 'criticism' and 'space' have come to acquire over the past decades (with 'space' being the most recent to have entered into the equation).

Critical philosophy's contemporary infatuation with spatial tropes, terms, figures and concepts (commonly celebrated as the 'spatial turn') has largely been enthusiastically embraced (albeit often misread) by many geographers and, thus, celebrated as the coming of age of space – at last! After all, isn't epistemic maturity reached when a subject becomes an object of theoretical attention? Hence, what else but a 'theory of space' is to be expected if geographers are to be up to the times or to authentic criticism – i.e. authentic theorisation? There goes again the 'philosophy envy'.

More to the point, the ill-concealed annoyance of some of the pioneers of geographic theory (Smith, N. and Katz, C. 1993) with the new-brand interest in space and spatial concepts by post-whatever philosophers only comes across as to confirm Yeung's diagnosis, yet in a twisted way: rather than 'envy' one would talk of a 'validation effect' in the light of the fact that the apparent convergence between philosophy's and geography's critical endeavours (the spatialisation of theory as paring up the politisation of space) has been assumed as endorsing previous theoretical impulses in critical geography and, more importantly, the very centrality of theory-making – independently of whether such spatialised philosophical musings were seen as productive or as fundamentally misguided (as in Harvey, D. 1989). Theory is here to stay.

A curious consequence of this 'validation effect', which has perhaps been little noticed so far, is the surprising transformation of the image and identity of 'geographic theory' itself. Until not so long ago, the very term was regarded as a rough oxymoron, for there seemed to be little doubt about the purely philosophical nature of the task of theory-making, which was assumed to be fundamentally at odds with the bare empirical orientation of geography. At best, theory showed up in those rare occasions when manuals on the 'progress' of the field were to be written, historical shifts had to be explained, or it was necessary to craft some highbrow affiliation to justify the legitimacy of a new emerging trend.

Compared to old-fashioned 'uncontaminated' empirical forms of geography (a distorted image that is, in all likelihood, the result of the recent infatuation with theory), geographic theory has become a remarkably fertile endeavour, even an awfully sexy oxymoron from which all sorts of benefits are to be expected. As Häkli, J. (2020, p. 370) has rightly pointed out: 'Who would have thought that one day the arid "philosophical study of being" would become a hot topic in human geography? Not many, I bet, but these days it is difficult to find a [geography] paper that does not mention ontology in some way, shape or form!'

The overwhelming transformation of geography into a sexy theoretical business (as usual) has prevented geographers from challenging the dogma about the fundamental need of theory and theorisation in critical geography – or at least has prevented such criticism from becoming vocal (some exceptions to this can be pointed out: Barnett, C. [1998a, b] and most recent interventions by Bodden, S. [2023]. Besides, rarely attention has been drawn to the fact that *critical* geography has become over the years rather *uncritical* in regard to its own assumptions and epistemic practices [Blomley, N. 2006, 2007, 2008], yet the place that theory might have played in this increasing dogmatisation has not been scrutinized).

Theory and Explanation in Geography provides such an occassion, for Yeung offers an insightful, quite comprehensive and most sympathetic analysis of mainstream geographic theories. As previously pointed out, the book, on the one hand, shows how theorisation has been deemed fundamental on normative-ideological grounds, i.e. different bodies of theories have been claimed to have political and emancipatory potential, and, thus, assumed as key to utterly mould the epistemic structure of geographical inquiry so that political change and social betterment can happen.

On the other hand, the book proves how theorisation has been established on ontological grounds, most typically by resorting to anti-foundationalist stances as variously developed in Anglo-American versions of mostly German and French philosophy, something that has ultimately predisposed to what Yeung calls 'open-ended' approaches to theory-making.

It is worth noting that even if theorisation is central to these two forms of geographic scholarship (what Lake, R.W. [2025b] has recently called a shared 'prioritisation of theory' in geography), the underlying understanding and practice of theory itself widely diverge, and criticism is envisioned also differently. While in the ideological forms of human geography thick theorisation of the various forms of the link between spatial forms and social orders is presented primarily as a guide to action and change; in the latter (open-ended epistemologies) theory is expressed in the form of ontological assertions (Bodden, S. 2023) that reveal the fundamental structure of the world (or lack of it indeed) so as to produce radical re-wordlings with emancipatory potential.

In both cases, Yeung empathetically (and with infinite patience!) explores internal limitations of said takes on geographic theory in the hope of redressing the fundamental fact that theory-making (under such critical forms) has taken on *carte blanche* in mainstream globally spread human geography, with the result of increasing levels of either esotericism or dogmatism. In either case, rather parochial standards of justification are at play, often deployed to prevent position in human geography from being criticised by other critical approaches (Yeung, H. 2024, p. 11).

With this diagnosis in view, Yeung's interpretation of contemporary geography's 'philosophy envy' begs the question as to how standards of theory-making are to be established in the field, i.e. through which criteria. Funnily, this is a stubbornly philosophical question (!), especially for someone who aims at ousting philosophy from its high position in geography.

However, as soon as the diagnosis is set, Yeung's book departs from theory. Instead of piling up philosophical arguments in favour of his explanatory theorising, he puts forward an example of what he proposes and, thus, tries carefully to stress-test his single piece of causal meso-level appropriate-to-(economic)geographers theory of global production networks.

Accordingly, the book's bottom line reads more or less as follows: it is the task of geographers to produce forms of theory that utterly fit geography's goals and fundamental spirit – whatever this latter means, Yeung is not willing to turn it into a philosophical or normative question. Yet despite all his fundamental decrying of geography's over-philosophising, Yeung's plea for explanatory theory-making needs rather badly some core 'realist' tenets, so as to partially rebuild overtly constructivist geography's epistemic frameworks and make explanatory frameworks function. Put it otherwise, ongoing philosophical discussions on new critical and speculative realism seem integral to the very possibility of retrieving and justifying explanatory theorising in geography according to the very standards (of practical adequacy, causality, etc.) that Yeung wants to set out. Curiously, one quickly realises that many of the criticisms that Yeung addresses to geographic writing grounded in fashionable philosophy would perfectly apply to the increasing esotericism, fashionability and speculative turns that various realisms have taken – as soon as one moves past page

number 25 in books by Quentin Meillassoux or Markus Gabriel, and, thus, the philosophical experiments and ontological counterfactuals begin, Yeung's philosophically-inclined readers can't help but mischievously wonder what would geographical theory look like should geographers embrace much of speculative realism's terms such as *'ancentralité'*, *'matière fossile, 'le grand dehors'*, or else if geographers were to seriously explore *'les énoncés ancestraux et diachroniques qui portent sur les événements antérieurs ou ultérieurs à tout rapport-terrestre-au-mond'* and the likes.

At that point one is left pondering whether Yeung's book proves that geography cannot afford itself 'too much' philosophy (of any type) before it becomes useless for the empirical purposes it used to assume (a take that fully justifies the path Yeung follows in his book in regards with his limited commitment to realism); or whether he seems rather to suggest that it is just a matter of 'bad philosophy', or, at least of choosing a philosophy fit for geography's goals – yet does anyone in the room know of a special kind like that?

'Beware of overthinking!' comes across in either case as the rallying cry in the book. Eventually, Yeung lays his cards on the table, for the right dose of philosophy to be administered to geography turns out to be a handful of 'analytical services'. The detour through speculative realism appears then as just a hook to bring empirical things back to geography and debunk any theoretical infatuation. Accordingly, Yeung, H.W. (2024, p. 20) goes on to claim that his explanatory theory 'occupies an epistemological position relatively free from the shackles of specific philosophical stances and ontological fixes (i.e. neither critical realism nor poststructuralism and postcolonialism)'. Yet is that really the case? 'All Cretans are liars!', one is tempted to shout, playing Epimenides the Cretan as pages go by, for to claim that 'I have no philosophy' is not the best way to avoid philosophical commitments.

Even when it is easy to realise that the bulk of Yeung's 'epistemic efforts' is put elsewhere, as the book strives to carefully rework relational approaches to ground an analytically robust explanatory mid-range form of theorisation, getting rid of old paradoxes proves hard. Particularly, I find it wanting the way Yeung operationalises critical and speculative realism without further engaging with otherwise key epistemic issues whose fuller development would deeply compromise key structures of post-positivist critical geography. So, is that the ultimate reason why he claims not to be trapped in any philosophical imbroglio?

This issue is not without importance for at least one reason. As I already mentioned, Yeung tends to overlook the particular role and nature of the fundamental link between *criticism* and *theory* (and space) in contemporary human geography. While he makes plain the integral character of theorisation to all transformations of/in critical geography, he does not go at lengths as to interrogate why this is so and how theory, geography and criticism have come to be linked together.

To my mind, the fact that the equation between theory, geography and criticism is left unexamined in the book is to do (besides the aforementioned taboo about the spatial turn) with the lack of a further scrutiny of prevailing constructivist schemes in critical geography and how critical stances construe themselves in the first place. Whether a deeper engagement with critical or speculative realist philosophy in the book would have been a possible avenue for questioning hegemonic constructivist stances in the field is certainly arguable. Yet a bolder and more thorough epistemic analysis would have done the trick.

Again paradoxically, these are questions that call for more (and not less, as Yeung would imply) philosophising, despite the fact that this necessarily will take geographers' time away from producing, testing and putting to work explanatory theories. Yeung has claimed that he firmly believes in the division of academic labour. So do I! Just as philosophers are not going to do geographers' job, as Yeung wittingly contends, division of labour *within* geography may still prove fertile, and, thus, a more defined and robust understand-

ing of what 'Theory of Geography' (as a subfield) might mean can help out.

Therefore, in the remainder of the paper, I would like to take issue with Yeung's celebration of the fact that in geography there does not exist something akin to the firmly established subfields of 'Political Theory', 'Social Theory' and the likes. I will briefly sketch an alternative take on what can be expected of theory, thinking and philosophy in human geography, which I reckon can go beyond a handful of 'analytical services', as he suggests.

The short-lived political promise of constructivism, the *Schonstellungen* of critical theory and a *coda* about Theory of Geography

I will lay out my objections to Yeung's take on 'Theory of Geography' rather indirectly, by bringing his book into dialogue with another recent book that addresses similar issues, albeit in a different way: *Difficulties with Critical Geography. Studies for a Reflective Theory of Society* by German geographer Benedikt Korf (2023). Prima facie, both books call for forms of self-limited immanent critique through which human geography's *theoretical hubris* (whether grounded in ideological-political premises or open-ended epistemologies) could be curved down. The reasons for undertaking such a task are different in each of the books: in the case of Yeung, practical adequacy, sensitivity to the specificity of socio-spatial contexts, normative justification and empirical grounding are key criteria for geographic theorisation, alongside reducing reliance on 'imported' philosophical sources. In the case of Korf, he wants to see emerging forms of critical geography grounded in different philosophical moods, e.g. modest and hesitant expressions of criticism that would leave more room for self-awareness, reflexivity and thoughtfulness through digressions and 'detours' (*Unwege*) and 'pensiveness' (*Nachdenklichteit*) à la Blumenberg.

An intuitive and frequent response to the criticisms that both Korf and Yeung raise against (un)critical geographical theorising is that *if* such theories have proven a capricious guide to intellectual life (Lake, R.W. 2025a) it is just a matter of merely 'bad critical scholarship' (Klinke, I. 2023) or 'bad theory' in critical geography (Mitchell, D. 2025). That is to say, if critical geography is afflicted by the kind of shortcomings and difficulties that both authors point out, it is just because it is not critical at all.

Very much against the grain of aforementioned responses, I would like to briefly argue something rather different, namely, that what is fundamentally at stake here is that said shortcomings and difficulties in critical geography arise *precisely* from the very *internal structures* of the various theories which geography has embraced, just because they are *critical* indeed. My overall contention is that what is ultimately at issue in both Yeung's and Korf's cautiously sceptical analysis of critical geographic theory is reckoning with the fact that said problems are *internal and integral to* critical theorising.

For one thing, said issues cannot simply be premised on poor or deviated forms of theorising – an argumentative strategy that ultimately secures core mechanisms of critical theory on moral, political or ideological grounds, encapsulating even further the fundamental believe in the performative nature of theory, as just depending on the re-orientation of discursive formations in which geographers' objects and concepts are to be displayed.

Likewise, nor can the issue be reduced to a 'mere' conjunctural problem (i.e. external), be it the bedevilling dynamics of capitalistic production of knowledge under neoliberal academia or any other evil circumstances that domesticate, absorb, neutralise or strip critical theories of their emancipatory goals. It would be preposterous to argue so, given the constructivist assumptions of mainstream theory-makers and their high standards of accountability about the determining conditions under which such theorising takes place, at least for theory to be able to bring about something other than ideology, disingenuous statements or false consciousness.

Should any reader fully and seriously engage with the realist or sceptical questions underlying the analysis of critical geogra-

phy in Yeung's and Korf's books, then the conclusions would be far more radical than either can afford to be in their present form in both books. This is why I think that Yeung's opening question, 'are these critical theories really theory?' ends up being rather rhetorical and Korf's operationalising (i.e. taming) of Marquard's sceptical position is doomed to fail (Puente Lozano, P. 2024).

If we take a cue from Korf's analysis of the same theoretical developments in critical geography that Yeung's brings into question, it is made plain that the epistemic structures involved in such stances make thinking function by simultaneously displaying accusations and exculpations in order to fundamentally articulate its own position and encapsulate it. It is perhaps worth noting that Korf's interpretation is very much indebted to German philosopher Odo Marquard, who used the concept of 'tribunalisation' [*Tribunalisierung der Lebenswirklichkeit*] in his 1973 *Schwierigkeiten mit der Geschichtsphilosophie,* exposing Philosophy of History and historical consciousness (key to the very endeavour of modern criticism) as a secularised form of the old theodicy.

In a way, reading both Korf and Marquard simultaneously, one could claim that the Philosophy of Geography that underpins critical scholarship has assumed and kept alive many of the mechanisms and moral benefits inherent to the old Philosophy of History. Ironically, even though postmodern *various spatialisations of theory and politics* aimed precisely at superseding the major shortcomings of historicism, any close reader of Marquard (or Koselleck's *Kritik und Krise*, for that matter, or even Sloterdijk's *Kritik der zynischen Vernunft* which looms prominently in other works by Korf, B. 2022) would be able to pinpoint the underlying key continuities between these two different forms of critical thought and outline them by what they share as both part of the same Kantian *Zeitalter der Kritik* (Puente Lozano, P. 2023).

Korf's analysis makes it clear how this typical gesture of 'tribunalisation' (e.g. moralisation) described by Marquard is a recurring pattern in critical stances. Put it otherwise, these positions are *essentially* construed in such a way as to leave small space (or no space at all) for reflexivity or critique of their own presuppositions. Again, following Marquard, Korf characterises these as '*Schonstellungen*', i.e. positions from which those who formulate them spare criticism to themselves, avoid it or, at best, make it superfluous.

With this premise as a starting point, Korf undertakes the task of exploring mechanisms inherent to certain forms of critical discourse in which the 'imported' theory to several social sciences withholds the fundamental function of constructing a position of 'immunity', of generating an encapsulation of one's own positions that exempts them from justification. It is important to notice that the deep *structuring* effect that moralisation brings about turns this problem into a very pervasive and distinctive issue, one that goes far beyond a superficial question of simple 'bad scholarship' as previously suggested. Once again, readers of Marquard and Koselleck are well aware of how deep these difficulties run, for the issues of 'mediation', 'regression' or 'derealisation' (as formulated by Marquard in his commentary of Hegel's concept of *Sollen*) are far from being solved in spatial (non-historicist, non-that-Hegelian) contemporary critical thought.

Political epistemologies that made it possible to rebuild human geography in its move away from positivism have remained confined to such modes of justification, with theory frequently playing a central role as a key to avoid any relapse into positivism (or idle idealism). This is so because theory (and the corresponding philosophical system to which it belongs) becomes itself a framework of validity in said trends, which is precisely what Yeung wants to avoid.

In other words the way concepts are mobilised and made to function in critical-geographical discourses produce their own 'framework of plausibility' ('*Plausibilitätsrahmen*' – according to the expression of German geographer Dietrich Bartels), one within which it is easy to move around unreflexively. Accordingly, Korf contends that the moral impulse that has

underpinned the post-positivist reconstruction of geography (making hence possible critical geography in the first place) has brought about a constant moralisation of positions and debates, entailing a never-ending doubling down and, thus, more emphasis on normative, ideological or philosophical commitments.

This brings me back to the fundamental intermingling of *geography, theory and criticism*, and why suggestions as to bringing into question *the centrality of theory* in critical geography are meet with bewilderment or anger, let alone automatically regarded with suspicion – anti-intellectualism is charged with the worst political sins, as reactions to recent call for 'resisting the seductions of theory' in geography (by Lake, R.W. 2025a) proof. Even though I don't concur with Lake's definitions of theory – or depiction of how theory manifests in geography as either Truth or Representation – I find quite telling the various misunderstandings that lie at the core of this discussion and how the terms of the debate are set out.

And yet the real enemies of theory are quite different, though!

Oddly enough, if both Yeung and Korf are unable to untie the Gordian knot that ties *geography, theory and criticism* in its present prevailing form, it is because they do not fundamentally bring into question the hegemony of constructivism in critical geography, which is at the root of the 'unquestionability' of said link and ensuing infuriation at any questioning of it.

Let me very briefly unpack the question.

In his insightful book *The Social Construction of What?* Ian Hacking pointed out that if talk of social constructivism had become a common coin, it was mainly because it had proved 'wonderfully liberating … and valuable for political activists' (Hacking, I. 1999, p. 1), particularly when it was first put forward. As Hacking, I. or Boghossian, P. (2006) have insisted alike, the 'discovery' of the contingent nature of the conditions upon which knowledge is premised and justified has been key to the very constructivist strategy against the 'inevitability' of facts under the guise of the evitability of the concepts or discursive formations within which such facts are embedded.

Accordingly, Hacking, I. (1999, pp. 6–7) famously captured the argumentative structure of constructivist positions as relying upon the denial of the inevitability of social or historical facts as key to political change. Typically, social constructionist follows three basic argumentative steps: (1) 'X' need not have existed or not be at all as it is (i.e. is not determined by the 'nature of things', and, thus, is not inevitable, but rather the product of social, economic or historical forces under which it first came into being). Moreover, (2) 'X' is quite bad as it is/was. (3) Therefore, we would be much better off if 'X' were done away with, or at least radically transformed. The combination of (2) and (3) is key to understanding why theorisation takes on such a political potential, for (3) is typically assumed to be an *inherently* progressive task.

Consequently, epistemic contingency has been key for epistemology to become political epistemology and for theory (understood as endless redescriptions of the 'nature' of things, i.e. of the discursive formations that defined such things as such) to become central to any intellectual endeavour, even geography!

Arresting as these remarks sound, '[un] fortunately social construction analyses do not always libertate' (Hacking, I. 1999, p. 2). Constructivism has ultimately turned out to be more of a cultural myth or an epochal fantasy than the solid dogma it once intended to be. The perception of the fundamental 'emancipatory' potential that theory assumes under such constructivist frameworks (i.e. things need to be 'theorised' otherwise because this is key to bringing about all sorts of performative miracles) is misleading most of the time, as the claim about contingency tends to be ambiguous about at which level it is predicated. Not only has such a take lost its political traction as soon as constructivist construals have become widespread in social sciences. It has resulted in rather banal claims, for this line of thought is overly simplistic, i.e. if something

is a natural fact, then we are simply stuck with it, and, thus, socially constructed things are easier to change than natural facts. This is, of course, a ludicrous assertion – diseases, vaccines, constant engineering of nature or extinction and modification of species are all examples of the opposite. And all the more so considering how persistent, pervasive or long-lasting certain social prejudices can be and how dilemmatic social action is when aiming at changing social structures.

So, going back to Yeung's book, the overwhelming hegemony of this constructivist scheme makes it difficult for theorising to occur in forms other than those already criticised by Yeung. His call for bringing into dialogue the critical trends he analyses with his explanatory theorising (and, thus, create a sort of Third Way upon which re-anchor an almost-free-from-philosophy Geography) comes ironically across as *Love's Labour's Lost.* Even if his contribution is much welcomed, unless this constructivist way of reasoning is brought into question, such critical theorising is doomed to become more (and no less) radical in its open-endedness or more (and no less) rigid in its moral encapsulation.

I am not saying that explanatory theory is not possible or convenient whatsoever. But I leave it to economic or human geographers to judge them. What I mean here is that it seems difficult under the prevailing constructivist scheme, which so firmly shapes (and orients in a *particular* direction) theory, critique and geography, that Yeung's style of theorising does not get but a raised eyebrow and be met with an 'Uh-huh, again!' (2024 *Dialogues in Human Geography* and *EPF* Book forums on Yeung's work).

The way (epistemic) things stand in mainstream human geography makes it hard that Yeung's view of theory is not received as the 'tyranny of explanation' strikes back, meaning the tyranny of monism hovers over geography.

This leads me to my final short *coda* on Theory of Geography as subfield. If I have previously discussed Yeung's diagnosis of 'philosophy envy', it is because I consider that critical geography's *theoretical hubris* cannot be attributed *solely* to an anxiety to keep up with the pressing demands of a rapidly changing academic landscape in which theory has become a privileged form of epistemic capital and moral comfort. Additionally, it can be argued that the academic pedigree and critical prestige bestow upon theory in human geography can be traced back to very different sources and reasons (internal and external to human geography alike), which predate common references to Harvey's rallying cry in *Explanation in Geography* ('By our theories you shall know us') indeed.

I cannot go at lengths with this point and make a comprehensive historical case to prove that this apparent dependency on 'external sources' is neither new nor specific to contemporary post-positivist geography – it can be traced back to the very origins of modern geography and much could be said along similar lines when it comes to the fundamental parallelism between how positivist and post-positivist forms of human geography got stablished by cherry-picking a range of authoritative forms of philosophy, science, social theory, etc. of the day.

Therefore, what is at issue here is a more fundamental problem about the epistemological constitution of human geography in the long run and about its place in the broader system of science as a whole – and, thus, as fundamentally linked to its structural conditions and the developments or transformations that regularly take hold in such a system. Reckoning with certain constitutive epistemic patterns in geography is something that calls for more reflection (not less) and for more (not less) philosophically (and historically) minded geographers able to address and soundly elaborate on such long-lasting epistemic questions. We simply cannot get away with them! And certainly not by trying to limit our philosophical commitments (or by believing that we have limited them).

More significantly, such a philosophical elaboration is not *solely* a matter of deploying robust analytical skills. While conceptual clarification and analytical robustness are very welcome indeed (and are often at the

beginning of any philosophical endeavour that is worth the name), it is a rather naïve assumption to expect that persistent epistemic or philosophical issues are simply to 'dissolve' when germane and brave analytical dexterity appears. This way of looking at things can be suited for car mechanics lovers, busy business travellers and very practically minded people, yet, it does a poor job when it comes to long-lasting dilemmas, geographic or otherwise.

Certain epistemic issues are here to remain in/with geography because they are to do either with fundamental features of geographical issues/objects or with the very nature of geography as a form of knowledge and its relation to other forms of knowledge.

So, this is not entirely a story about 'philosophy envy', it is something broader and deeper that we need to come to terms with. Accordingly, Yeung's celebration of the non-existing subfield of Theory of Geography is premised upon a mischaracterisation of sorts. Certainly, he is right when he says that nothing comparable to what we encounter in other social sciences (such as Social Theory, Economic Theory or Political Theory) does exist in geography or at least does not exist to the extent that it can be considered a fully-fledged and well-established institutional realm as the ones aforementioned. As a matter of fact, in the recently published *The promise of cultural geography*, Conway asserts: '… while the vocation of political theorist, social theorist, international theorist, or cultural theorist are all well established, *it is unclear what "geographical theorist" would even mean'* (Conway, P. 2025, p. 52. Emphasis added). Nobody knows what on earth this business is about, and yet it hasn't stopped growing and impressing hiring committees and editorial boards!

The relevance and political-cum-academic pedigree that theory has come to acquire over the last decades has resulted in an utter resignification of the very enigmatic syntagm 'theory of geography'. In just a few years, the previous lack of clarity about what geographical theory might consist of (other than a sheer oxymoron as previously noted) has been replaced by a staggering proliferation of meaning, mostly under the guise of prescriptive formulas. The limelight has been stolen by cultural geographers, though for such a fancy task has generally been left to them, theory-makers *par excellence* in human geography (see Barnett, C. 1998a, b). Significantly, Conway, P. (2025, p. 51) has aptly explained why this is so: 'To study culture (whatever this may be), one cannot bypass for long questions of interpretation – and, then, questions of theory. It is not, of course, the case that only cultural geographers engage in theoretical reflection, any more than it is only international relations scholars that study nuclear weapons, great power wars, or genocide. The point is simply that the subject matter of cultural geography imparts an uncommonly strong demand for, as Stuart Hall once articulated it, 'the detour through theory'.

Were historians of geography (and those rare and quirky younger brothers of theirs devoted to epistemic and philosophical reflection in geography, Doel, M. 2024 dixit) to understand their work in a classical way they should confine themselves to consigning, compiling, ordering, and, when necessary, presenting in a scholarly and affordable-to-students format the rather unfathomable complexities of the flamboyant theoretical apparatuses which leading cultural geographers have been busy producing. However, those venturing well beyond this propaedeutic task, have additionally deployed a wide-ranging array of approaches (contextual, biographical, intellectual, place-based) to trace, explore and carefully account about the intellectual and material histories and geographies of recent theoretical and methodological developments in critical human geographies (Barnes, T. and Sheppard, E. 2019; Berg, L. *et al.* 2022; Jakobsen, P. *et al*. 2022; Larsen, H.G. 2022).

These works share a recognisable common interest in mapping out the geographies and complex historical spatialities of circulation, translation, influence, and recognition through which critical human geography unfolded over the years. Importantly, these

works have provided source-rich and contextually-grounded accounts of the different (and sometimes diverging) historical paths and institutional sites through which critical and theory-inspired endeavours emerged, evolved, and deeply transformed previous academic traditions. More to the point of my argument, said spatial histories bear witness to the pervasive nature of the bifurcated fate of critical/radical geographies, that is to say: an increasing split between more empirically-oriented and engaged scholar endeavours and the drive towards 'developing a corpus of abstract geographic theory to represent and explain the world' (Barnes, T. and Sheppard, E. 2019, p. 21), with an eventual debunking of the former since the 1970s in favour of the growing traction and academic prestige of the project of building a theoretical basis for the discipline.

Certainly, said spatial histories have brought about a very compelling gain of situated reflexivity. They express a wider quest for normative reflection, self-awareness, and intellectual heterogeneity in the field (Keighren, I. *et al*. 2013). Yet it seems that so far, history and philosophy of geography (HPG) practitioners have left fundamentally unquestioned the very styles of theory-making and philosophical moods that lie at the core of critical geographies, with very few exceptions, as pointed out. My contention is that engaging with some of the epistemic issues that I just mentioned through this commentary is a typical task that philosophically minded geographers can undertake – even at the cost of becoming the Jiminy Cricket that spoils the party to cultural geographers!

For many reasons, Yeung's call to 're-centring geographic theory' should be understood as an integral part of what is to be done in the sub-field HPG and may eventually result in a more meaningful sub-field of Theory of Geography. All in all, a more substantive and purposeful philosophical reflection is required – a philosophy of geography that goes beyond the programmatic and prescriptive uses of theory and the hectic styles of mutually contested camps and entrenched theoretical silos which the endless turns and twists (essentially ahistorical) in the field have brought about.

Even when I am rather sceptical (as much as Yeung) about the way geographers have lately engaged with theory under the formula of commentary after commentary on such-and-such philosopher, I do not concur with explanatory forms of geography as having any privileged relationship with geography's object, spirit and goals. As things stand right now in the field, more explanatory mid-range theorisation will certainly be useful and refreshing, yet I still consider that theory can meaningfully express itself in geography in the form of philosophic thematisation of geographic objects and concepts. Off the top of my mind, I would argue that Malpas, J. (1999, 2012, 2022) has provided an outstanding example of this. And yet he is one of the few ones around deeply aware that fruitful geographic theorising cannot take place within the iron cage of constructivism, where the overemphasis on the contingency of particular instantiations of geographical objects (places, in this case) completely obliterates the very possibility of grasping why and how 'place' is a necessary structure to human experience.

Finally, going back to Compagnon and *Le demon de la théorie*, whatever relation geography may hold to theory, I would argue that when it comes to thinking, it is best to err on the side of caution. Sooner or later, theory's *vis polemica* turns into theory's *vis comica,* not to mention the tragic face it gives so repeatedly, in view of the frequently crooked, twisted, unexpected, corrosive, incomplete or downright deviant ways in which the best or worst ideas have come true and got realised in the world.

Taking seriously the fundamental irony that lies at the core of theory-making entails forms of self-reflectivity that lead to hesitant rather than militant forms of critique and thinking. The drive towards philosophical reflection leads more often to contradiction than to adhesion.

After all, the laughter of the Thracian maid always haunts theory's very soul (Blumenberg,

H. 1987). And, thus, theory's *vanitas* becomes most apparent when least expected. As much as 'The Sleep of Reason Produces Monsters', as in the world-famous Plate 43 from Goya's series *The Caprices*, contemporary academic infatuation with critical theory (in the forms already decried) seems to have produced mirages worth looking at head-on. Going back to initial spoofs, perhaps it is worth recalling that already in 1996, witnessing the tide of the theory rise, Smith funnily asserted: 'The appropriate political slogan for the remainder of the 1990s ought to be: "By our nightmares ye shall know us"' (Smith, N. 1997, p. 135).

In this light, much of what is taken as theory-making might appear more like banal formulas fit for academic promotion and cursory commentary in cultural festivals than thought up to its own ironies and paradoxes.

Of course, self-irony comes across as a rather meagre consolation (if not outright heresy) in the face of the stubbornly enduring hopes that critical scholars have bestowed upon theory. Yet it does not matter anyway – it is not a secret that the laughability of thinking itself is a rather annoying, trifling and tricky vagary with which spoilsport sceptics entertain themselves, diverting energies from real-life urgent issues.

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Theory, explanation and references in geography: Comparing two seminal books by David Harvey and Henry Yeung

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Abstract

This article aims to present how the comparative bibliometric analysis of seminal books' reference lists reflects, and enables scrutinising, some fundamental structural characteristics of the functioning of Geography as a scientific discipline in different periods. It employs David Harvey's *Explanation in Geography*, a magnum opus of Geography's quantitative revolution from 1969, and Henry W. Yeung's *Theory and Explanation in Geography* from 2024, a comprehensive conceptual work whose title consciously evokes Harvey's volume, as case studies. After discussing the possibilities and limits of investigating books as imprints of changing academic practices and addressing methodological questions, the paper reveals a significant increase in the number of references and referenced publications between the two books. It reaffirms the rising share of journal articles (instead of books) and multi-author publications (instead of single-author ones) as structural outcomes of 'academic neoliberalisation', while revealing that books, book chapters and single-author publications still make a difference and have a considerable impact on academic discourses. It presents that 'Geography' as a term has become rather a synonym of 'Human Geography' in certain contexts, instead of containing both Human and Physical Geography. The results prove a significant growth in the impact of publications by female authors and the visibility of scholars outside the UK and the USA, including the Global South. At the same time, they still indicate a firm male dominance and the hegemony of Anglo-American authors and English language publications in the discipline.

Keywords: decolonial, geographies of science, geopolitics of knowledge, Global North/Global South, scientometrics, David Harvey, worlding, Henry W. Yeung

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Introduction

In 2023, few new books attracted such interest in international geography as Henry Wai-chung Yeung's *Theory and Explanation in Geography*, published with Wiley in the book series of the Royal Geographical Society with the Institute of British Geographers (Yeung, H.W. 2024). Although the book was released with a 2024 copyright, academic events to discuss the volume began well before the end of 2023, with the Author Meets Critics session at the Annual International Conference of the RGS-IBG in the Ondaatje Theatre of the Society's London headquarters on 1 September 2023 certainly being among the most important of them (https://vimeo.com/860120139/b7a924c36b). In the succeeding one and a half years, a series of book launch events took place around the world, including a tour at seven Geography departments in UK universities in February 2024 (https://www.linkedin.com/in/henry-yeung-20176266/recent-activity/all/), a book trip around the north-eastern quarter of the USA and the UK in September and October 2024 (https://www.linkedin.com/feed/update/urn:li:activity:7239559854292377601/),

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and a series of visits at universities throughout continental Europe in November and December 2024 (https://www.linkedin.com/posts/henry-yeung-20176266_the-first-of-my-book-talk-in-the-last-book-activity-7262821435436392448-BSo8).

While the book aimed to be "useful in making a clear(er) case for explanatory mid-range theory in Geography" (Yeung, H.W. 2024, p. xiii), it was doing so by referring in the very first sentence in Chapter One to David Harvey's (1969) magnum opus with a similar, though not identical, title, *Explanation in Geography*, one of the best-known and most-cited pieces of Geography's 'quantitative revolution' in the 1950s and 1960s (cf. Johnston, R. 2008; Gyuris, F. *et al.* 2022). The similarity in the titles of the two books is unmistakable, just as their special relationship, with Harvey's work serving as a milestone and reference point in the history of Geography, relative to which Yeung introduced and presented his significantly newer and fundamentally different own argumentation (cf. Yeung, H.W. *et al.* 2025). Yeung's overview of theory and explanation in contemporary geographical thought also starts where Harvey's 1969 volume ended, "tak[ing] a quick tour of the key conceptual priorities and their styles of theory and/or explanation in the various critical approaches since David Harvey's (1969) rendition of the positivist approach for Geography" (Yeung, H.W. 2024, p. 36).

Both books are large-scale scientific undertakings that seek to find an adequate theoretical underpinning of Geography. In addition to that, their authors intended them to be gap-filling works, a significant educational function of which was to facilitate the work of professional readers who are (yet) less familiar with the complex and diverse topics presented in the book but who wish to review and understand these topics in a structured way. (Cf. Harvey, D.'s [1969] words about "I sought to publish it [the book] because I feel sure there are many geographers, both young and old, who are in a similar state of ignorance to that which I was in before I commenced to write" [p. v] and Yeung, H.W. [2024] stressing that "there is no recent authored academic book in Geography that goes into this kind of epistemological debates on theory and method" [p. xii] and "[j]ust like one very kind reviewer of my full manuscript has alluded, I too wished I had seen and perhaps read such a book during my Manchester PhD in the early 1990s" [p. xiii].) As a result of all of this, the two books provide a detailed overview of the newest (relative to their time) conceptual and theoretical discussions in Geography, along with the most influential authors and publications in these discussions. By doing so, they *record* the structure of contemporary theory debates in Geography and *influence* their readers' imaginations of who counts as the most important authors and what the most relevant theoretical works are in and for the discipline. Therefore, this study aims to analyse the reference lists of the two books and compare them to reveal some major structural characteristics of academic publishing in Geography, as well as the evolution of these characteristics between the 1960s and the 2020s. Particularly, it will focus on (1) the number of references, (2) the share of single- and co-authored references, (3) the most referenced scholars, (4) the gender ratio and (5) the geographical background of referenced scholars.

The relevance of analysing books from a geographies of science perspective

Over the last quarter-century, several scholars have investigated how the neoliberal shift in global economics and politics since the 1980s has led to a significant transformation in the functioning of academia, including the practices of scientific writing and publishing (Paasi, A. 2005, 2015, 2025; Hannah, M.G. 2018). Although, as Hannah, M.G. (2018, p. 18) pointed out, the consequences or "perils" of what he called "academic neoliberalization" have played out in variegated ways in different countries, they have some remarkable structural features that foster similar mechanisms of transformation in

academic strategies and practices virtually everywhere. In many cases, public funding provided to universities and research institutions either decreases or becomes conditional on what is called the academic productivity of these institutions, increasingly measured by the number of publications the scholars affiliated with the institution publish. That happens directly as well as indirectly, for instance, in the form of fetishising the rank a specific institution receives in some of the globally most powerful rankings produced by international analytics firms (such as QS World University Rankings by Quacquarelli Symonds and THE World University Rankings by the U.S. News & World Report in the United States, or ARWU Academic Ranking of World Universities by the Shanghai Ranking Consultancy in China). In these rankings, the number of publications and their citations play a decisive role (cf. Paasi, A. 2025). As another pervasive phenomenon, funding from research grants accounts for an increasing share of the revenues of scientific institutions (Hannah, M.G. 2018; Cupples, J. 2020). Consequently, these institutions find themselves in perpetual competition for these resources, where the number of publications and the citations they receive significantly impacts the likelihood of a grant application becoming successful (Paasi, A. 2025).

Neoliberal practices of audit and assessment are strongly quantitative. They pay distinguished attention to features that can be expressed in numbers, which allow technically precise calculations and measurements, including creating sophisticated rankings of which scholars or institutions are 'better' and 'how much'. (Even if these precise calculation techniques are not necessarily accurate in grasping the actual quality, novelty or general social utility of the scientific knowledge that is being produced). As researchers and their institutions are increasingly pressured to publish more, they become more interested in 'fast publishing' (Sheppard, E. 2012), including prioritising writing journal articles (Johnston, R. 2005; Cupples, J. 2020), which are much shorter and can be produced in significantly higher quantities within a given timeframe, rather than books. Hence, under these circumstances of 'academic capitalism' (Slaughter, S. and Leslie, L. 1997), "[i]nstead of monographs, institutional recognition is increasingly attributed to journal articles" (Paasi, A. 2025. p. 57), which, in some instances, may happen in quite harsh forms, such as "chairs suggesting [their staff to] desist from publishing books" (Sheppard, E. 2012, p. 1).

These structural features also push researchers towards 'getting more for less' by producing '*least publishable units*' (Broad, W.J. 1981), i.e. manuscripts with the minimum amount of research required for being regarded as publishable at a basic level, instead of writing comprehensive papers, and submitting papers to journals that just reach the minimum standard of avoiding desk rejection and only if they are allowed to undergo major revision, the authors will devote a significant portion of the work that should have been done before the first submission.

Moreover, publishing ten articles instead of a monograph may result in ten times more references to certain publications and their authors, and ten articles may attract ten times more citations than a single monograph. That also makes scholars collectively interested in producing more articles and fewer books, as they are expected to attract an increasing number of citations. The same underlying reasons also contribute to 'the collaborative turn' (Olechnicka, A. *et al.* 2019) and the skyrocketing share of co- and multi-authored publications, rather than single-authored ones, where the publication and its citations are fully included in the statistics of each co-author, thereby boosting their numbers (Gyuris, F. 2018). Since monographic books are usually the enterprise of a single author or two authors who have been working closely together on the same topic for a long time, the 'collaborative turn' also works against writing monographs.

Despite these structural forces, books, particularly monographs, continue to play a crucial role in many disciplines, including Geography. Although several academic

journals tended towards downsizing or even suspending their book review sections, the American Association of Geographers (AAG) launched *The AAG Review of Books* as a separate journal dedicated solely to book reviews in 2013. Whereas the Annals of the AAG published only 19 book reviews in its five issues during 2012, the last year before *The AAG Review of Books* launched, the latter released 3.3 times more book reviews (63) in 2013, which was not just a one-time outlier, as the journal also released 51 book reviews in 2024.

As another sign of the importance of books, checking the individual profiles of Google Scholar for scientists having Geography among their disciplinary labels (who can be identified by searching for 'label: geography' in the database) will lead one to find David Harvey standing on the top of the list with 384,697 citations (as of 17 June 2025). Although Google Scholar, like many other academic databases, have their significant limitations and biases (many of which are presented by Olechnicka, A. *et al.* 2019), out of Harvey's 15 most-cited publications, which received 237,440 citations in sum (or 61.7% of Harvey's total), there is only one journal article (Harvey, D. 1989) with 10,102 citations and 14 books and book chapters (including reprints and editions in foreign languages) with 227,338 citations. As Gyuris, F. *et al.* (2025) reveal for another research tradition, that of global production networks, the six most-cited publications in the field include a seminal book, *Global Production Networks: Theorizing Economic Development in an Interconnected World* from Coe, N.M. and Yeung, H.W. (2015), and if one counts only the citations from 2020 to 2024, the same monograph will lead the list.

There is also considerable evidence from various social sciences that monographs written in the form of comprehensive and easily understandable essays are especially likely to become fundamental textbooks, whose significance is not only reflected in the number of scientific citations they attract but also in the massive catalysing role they play in paradigm shifts. (See, for example, Barnes, T.J. and Bergmann, L.R. [2022] on Bunge, W.'s [1962, 1966] *Theoretical Geography* or Hubbard, P. *et al.*'s [2008] *Key Texts in Human Geography*, all 26 chapters of which are about books instead of articles.) In many cases, such books also have the potential to attract the interest of millions of readers outside the narrow confines of science, make them aware of certain phenomena and the connections between them, and achieve a remarkable social impact – including making the entire discipline much more visible, relevant and important to the eyes of the broader public (cf. Gyuris, F. 2014 on Wilkinson, R.G. and Pickett, K.'s [2009] *The Spirit Level*, Sheppard, E. [2015] on Piketty, T.'s [2014] *Capital in the Twenty-First Century*, or Kornai, J. [2006] on the reception and afterlife of his influential book *The Socialist System: The Political Economy of Communism* [Kornai, J. 1992]).

In addition to their significant contribution to the scientific enterprise, books can also serve as essential *research objects* from a geography of science perspective. Especially monographs, which aim to synthesise a large body of literature and give a comprehensive overview of the state of the academic discourse and the most relevant ideas and publications, are significant milestones in the historical process of scientific knowledge production. They are not just one of the many publications of a particular scholar but also bear the imprint of the structural features of knowledge production of their time (and place). Comparing seminal books from different ages with each other may reveal not just the personal writing, editing, or referencing styles and habits of their authors. It also provides insight into the general writing, editing and referencing conventions and norms of the broader academic context in which these books were written – as well as ruptures and continuities in these conventions and norms.

Methodology and results

In this study, the reference analysis was based on the reference lists in Harvey's and Yeung's books. As Harvey, D.'s (1969)

seminal work was published well before the emergence of online citation databases, I scrutinised the items in its reference list manually, one by one. Yeung, H.W.'s (2024) volume is indexed in the Scopus database, which includes the entire list of references and allows a relatively fast and comprehensive analysis of the references. However, the database also contains some data errors and inconsistencies, necessitating manual review before the study. The resulting dataset included the title, authorship, year of publication, and the publishing platform (e.g. book or journal) for each referenced item.

The author data required for the analysis could be collected using several sources. In most cases, the Scopus database contains the full names of the cited authors, and the gender of the cited authors can usually be identified based on the first name. However, in some cases, only the first name's initial letter was included in the database, and the reference list in Harvey's volume only included the initial letter of the first name of all cited authors. Of course, the full name and gender of specific famous authors are also well-known and do not require special research. In other cases, for contemporary authors, the official open-access university/research institute profile of the cited author provided information about the author's gender. In the case of authors who are no longer alive, the necessary information could best be found in the former publications of these authors available in the open domain, in obituaries or memoirs written about them, and, occasionally, in library databases (e.g. the US Library of Congress catalogue).

Information on the geographical background of the authors cited by Yeung was primarily based on the Scopus database, which, in most cases, allowed the determination of the then-current institutional affiliation of the referenced author as recorded in the referenced publication. In other cases, official information in the open domain (primarily the personal profile on the institutional website) provided adequate information about the referenced authors. The geographical background of the authors cited by Harvey in 1969 could mostly be identified by scrutinising books and articles on the history of science, as well as obituaries and memoirs written about the particular authors.

Number of referenced publications and authors

David Harvey's 542-page book includes 514 references from 423 authors (including co-authors). Although Henry Yeung's volume is significantly shorter and adds up to 336 pages, it contains 839 references from 679 authors (*Figure 1*). In other words, while the average number of referenced publications per page is 0.95 for Harvey's monograph, it is 2.50 for Yeung. Likewise, the number of referenced authors relative to the number of pages increases from 0.78 for Harvey to 2.02 for Yeung. In both cases, this is more than a two-and-a-half times increase between the two books.

The two volumes also show remarkable differences in the structure of referenced publications by document types. For Harvey, D. (1969), 47.2 percent of the referenced publications are books (monographs and edited books), and 11.5 percent are book chapters, which add up to a total of 58.7 percent. The share of journal articles is significantly lower, 35.1 percent, and other document types (professional reports, discussion papers, dissertations and unpublished manuscripts) contribute 6.2 percent. In Yeung,

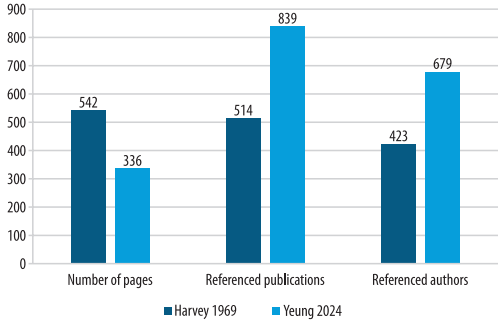


Fig. 1. The number of pages, referenced publications and referenced authors in Harvey, D. (1969) and Yeung, H.W. (2024). *Source:* Author's analysis.

H.W.'s book (2024), however, 64.1 percent of the referenced publications are journal articles, and only 25.2 percent of them are books (17.1%) and book chapters (8.1%), with other document types representing 10.7 percent.

The two books can also be compared regarding how far back their references go in time. In this respect, it is not fundamentally important how old the earliest publication they cite is (Tissot, M.A. 1881 in Harvey's case and Locke, J. 1975[1690] in Yeung's book), but how old or new the bulk of the cited works are. To determine this and make the references of the two books comparable, I compared the publication date of the cited publications to the publication date of the corresponding book (t), where the value of t is 1969 in the case of Harvey's book and 2024 in the case of Yeung's book. During the analysis, I examined each year the share of the publications published up to that year (i.e. in that year or earlier) relative to the cumulative total of all references in the given book. For example, in the case of Harvey's book, *t–50* includes all cited publications published up to 1919 (i.e. in 1919 and before), and in the case of Yeung's book, it consists of all cited publications published up to 1974 (i.e. in 1974 and before).

As the results indicate (*Figure 2*), in the case of Harvey's book, half of the cited publications were no more than seven years old when the book was published, while in Yeung's title, publications of the same age provided only 28.0 percent of all citations. In Harvey's volume, only one-third (33.3%) of the cited works were more than ten years old, and only 8.6 percent were more than twenty years old, while in Yeung's book, the exact proportions were 60.8 percent and 31.5 percent. For Harvey, publications older than thirty years accounted for only 4.9 percent of the references, while for Yeung, they accounted for 12.2 percent. In Harvey's book, the proportion of references older than eleven years was roughly the same (31.3%) as the share of references older than twenty years (31.5%) was in Yeung's book. Furthermore, the proportion of references older than 18 years in Harvey's volume was roughly the same (12.3%) as those older than 30 years in Yeung's book (12.2%). It can therefore be seen that the time horizon of the references in Yeung's book goes back significantly (about 10–12 years) further compared to the publication date of the volume than in Harvey's.

I also took a closer look at the number of referenced authors. In David Harvey's 1969 *magnum opus*, each referenced publication has an average of 1.16 authors. In Henry Yeung's 2024 volume, the corresponding value is 1.47 (*Figure 3*). That indicates an increase in the share of multi-authored publications, which is a general trend in contemporary academia. However, the value of 1.47 still reflects a significant share of single-authored works among the referenced publications.

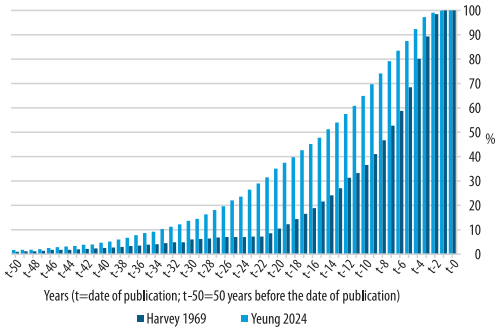


Fig. 2. The cumulative share of referenced publications released before a specific year in Harvey, D. (1969) and Yeung, H.W. (2024). *Source:* Author's analysis.

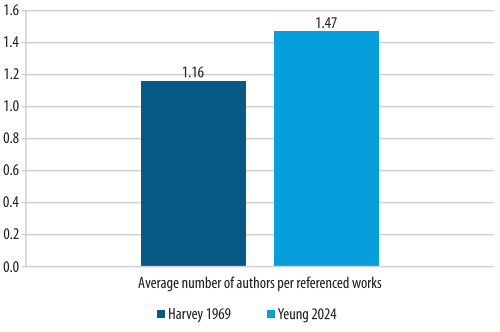


Fig. 3. The average number of authors of referenced publications in Harvey, D. (1969) and Yeung, H.W. (2024). *Source:* Author's analysis.

Most-referenced authors

In both books, the referenced authors significantly differ in the number of times their works were cited. Among the 423 authors cited by David Harvey, 386 scholars (91.3%) were cited with only one or two publications, and only 37 authors (8.7%) had at least three publications cited. However, the publications of these 37 authors received 33.5% of all references. For Henry Yeung's book, 679 authors were cited in total, 564 of them (83.1%) with just one or two publications and 115 authors (16.9%) with at least three publications, and the 115 authors received two-thirds (66.9%) of all citations (*Figure 4*). That means a relatively few, especially influential scholars lead the list of referenced authors for both books, and their dominance is significantly stronger for Yeung's book than for Harvey's.

Even among the most-cited authors, some stand out with remarkably high numbers. Harvey referred to 17 publications of the UK-born human geographer Brian Berry, who made his academic career in the United States and became one of the most influential representatives of Geography's 'quantitative revolution' (cf. Barnes, T.J. 2001; Johnston, R. and Sidaway, J.D. 2016; Gyuris, F. *et al.* 2022). Berry was closely followed in second place by the US quantitative geographer Michael Dacey, with 15 publications cited. The UK-based Richard Chorley, another leading figure of Geography's quantitative turn in the 1960s, is already significantly behind Berry and Dacey with 8 publications cited. Most of the list is made up by leading representatives of Geography's 'quantitative revolution', including a young Harvey himself (*Table 1*).

In Yeung's book, 30 references go to publications in which Yeung himself was involved as either a single or co-author. This is not surprising in a volume whose author aims to give a comprehensive overview of the current state of research in a field he has intensively contributed to for several decades as one of the most prominent international scholars. The other most-cited authors are the University of British Columbia-based geographer Jamie Peck (21), the British sociologist Andrew Sayer (16), the UK-born geographers David Harvey and Nigel Thrift (12–12), the Irish-American political scientist and historian Benedict Anderson and the British geographers Doreen Massey and Peter Dicken (11–11) (*Table 2*).

As a significant difference, Harvey, D. (1969)'s top references include many human as well as physical geographers and several philosophers. In Yeung, H.W.'s (2024) volume, the most-referenced geographers are all *human* geographers and some social scientists are also at the top of the list.

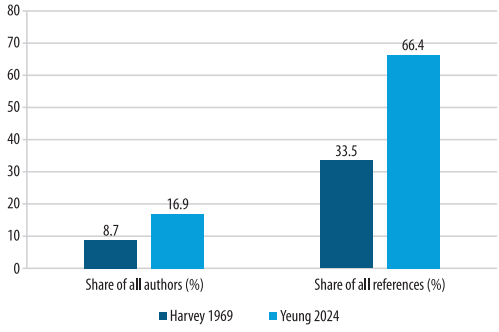


Fig. 4. The share of referenced authors with at least three referenced publications and the share of references of these authors in Harvey, D. (1969) and Yeung, H.W. (2024). *Source:* Author's analysis.

Gender ratio: Decreasing but still significant male dominance

I investigated the gender ratio for the most-cited authors, with three or more references each, which included 37 authors in Harvey's book and 115 in Yeung's volume. For David Harvey's monograph from 1969, *all* of these authors were male. In Henry Yeung's book, published 55 years later, the share of female scholars among the most-cited authors increased to 24.3 percent, and 20.8 percent of all references went to publications from female authors and co-authors. These numbers reflect a significant change over the decades (*Figure 5*). Nonetheless, the gender ratio still

Table 1. The most cited scholars in Harvey, D. *(1969)*

Rankings	Name *(Discipline)*	Country (place of birth)	Number of first-authored publications
1	Berry, Brian J. L. *(Geography)*	UK	17
2	Dacey, Michael F. *(Geography)*	USA	15
3	Chorley, Richard J. *(Geography)*	UK	8
4	Curry, Leslie *(Geography)*	UK	7
5–7	Garrison, William L. *(Geography)*	USA	6
5–7	Haggett, Peter *(Geography)*	UK	6
5–7	Harvey, David *(Geography)*	UK	6
8–11	Carnap, Rudolf *(Philosophy)*	Germany	5
8–11	Kendall, Maurice G. *(Statistics)*	UK	5
8–11	Marble, Duane *(Geography)*	USA	5
8–11	Tobler, Waldo *(Geography)*	USA	5
12–20	Getis, Artur *(Geography)*	USA	4
12–20	Hägerstrand, Torsten *(Geography)*	Sweden	4
12–20	Hartshorne, Richard *(Geography)*	USA	4
12–20	Hempel, Carl G. *(Philosophy, logic)*	Germany	4
12–20	Nagel, Ernest *(Philosophy)*	Austria-Hungary	4
12–20	Olsson, Gunnar *(Geography)*	Sweden	4
12–20	Popper, Karl *(Philosophy)*	Austria-Hungary	4
12–20	Robinson, Arthur H. *(Geography)*	Canada	4
12–20	Stoddart, David R. *(Geography)*	UK	4

Source: Author's analysis.

Table 2. The most cited scholars in Yeung, H.W. *(2024)*

Rankings	Name *(Discipline)*	Country*	Number of first-authored publications
1	Yeung, Henry W. *(Geography)*	Singapore	30
2	Peck, Jamie *(Geography)*	Canada	21
3	Sayer, Andrew *(Sociology, philosophy, urban and regional studies)*	UK	16
4–5	Harvey, David *(Geography)*	USA	12
4–5	Thrift, Nigel *(Geography)*	UK	12
6–8	Anderson, Benedict *(Political science, history)*	USA	11
6–8	Dicken, Peter *(Geography)*	UK	11
6–8	Massey, Doreen *(Geography)*	UK	11
9	Latour, Bruno *(Philosophy, anthropology, sociology)*	France	10
10–13	Allen, John *(Geography)*	UK	8
10–13	Coe, Neil M. *(Geography)*	Australia	8
10–13	Sheppard, Eric *(Geography)*	USA	8
10–13	Storper, Michael *(Geography)*	USA/UK	8
14	Bhaskar, Roy *(Philosophy of science)*	UK	7
15–24	Ash, James N. *(Geography)*	UK	6
15–24	Beach, Derek *(Political science)*	Denmark	6
15–24	Boschma, Ron *(Economics)*	Netherlands	6
15–24	Butler, Judith E. *(Education)*	Ireland	6
15–24	Cox, Kevin R. *(Geography)*	USA	6
15–24	Elder-Vass, Dave *(Sociology)*	UK	6
15–24	Foucault, Michel *(Philosophy, history)*	France	6
15–24	Harman, Graham *(Philosophy)*	USA	6
15–24	Hess, Martin *(Geography)*	UK	6
15–24	Tsang, Eric W.K. *(Business studies)*	USA	6

*Institutional affiliation as recorded in Scopus for 2024 or the latest available date before 2024. *Source:* Author's analysis.

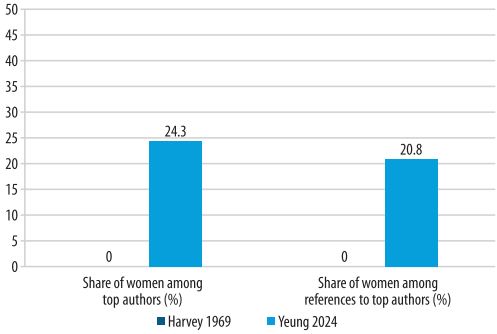


Fig. 5. The share of female scholars among the most-referenced authors and the references of female scholars among all references in Harvey, D. (1969) and Yeung, H.W. (2024). *Source:* Author's analysis.

moves within the range of 3:1 and 4:1, indicating a high degree of gender disparities in contemporary academia. Notably, among the 115 most cited authors in Yeung's book, one researcher identifies as non-binary in the publicly available personal profile at the university website, which would have been hardly imaginable in the 1960s. Despite the small case number, this phenomenon also indicates the more general social changes between the publication of the two volumes and the transforming social context of the operation of science.

Geographical background of the referenced works' authors: European and North American dominance, with a slowly increasing presence of the Global South

Determining the geographical background of the authors cited by Harvey is a highly complex task for two reasons. On the one hand, no source is available that would reliably contain all authors' biographical data. Instead, the related information can only be found by searching for individual authors in many different sources, which is sometimes extremely time-consuming and may not even lead to a clear result. Moreover, sometimes there are uncertainties in the available sources, so it is necessary to explore and critically compare several sources for a specific author, and only if these sources match will it be possible to produce the required geographical information. On the other hand, it is often particularly difficult or practically impossible to determine a given author's affiliation when a given publication was made, which was not consistently indicated in most publications for a long time. This is especially true for turbulent periods in history, when, for example, due to world wars and the terror raging in totalitarian dictatorships, many researchers were forced to flee their previous places of residence and work, sometimes even several times within a short period.

Therefore, rather than determining the geographical background of cited authors based on institutional affiliation, a more precise possibility has opened to scrutinise the authors' place of birth. Of the 37 authors from whom Harvey cited at least three publications each, nearly two-thirds were born in a location currently belonging to either the United Kingdom (35.1%) or the United States (29.7%). Most of the rest came from continental Europe (Germany: 8.1%; Sweden: 5.4%; Austria, Czechia, Hungary, Moldova and Norway: 2.7% each according to the national boundaries of 2025), one from Canada (2.7%), one from New Zealand and one from today's Turkey. Africa, Central and South America and the rest of Asia were not represented. Considering that Harvey did not refer to the same number of works by each author and focusing instead on the 172 publications from these 37 authors, the results will reveal that 72.7% of the references went to publications with authors born in either the UK (41.3%) or the US (31.4%), which indicates an extreme Anglo-American focus (*Figure 6*).

For Yeung, H.W.'s (2024) book, the Scopus database contains information about the institutional affiliation of the authors of the referenced publications. This dataset was used to analyse the geographical background of the referenced publications. As the results indicate, a strong dominance of British (37.0%) and US (23.6%) authors ap-

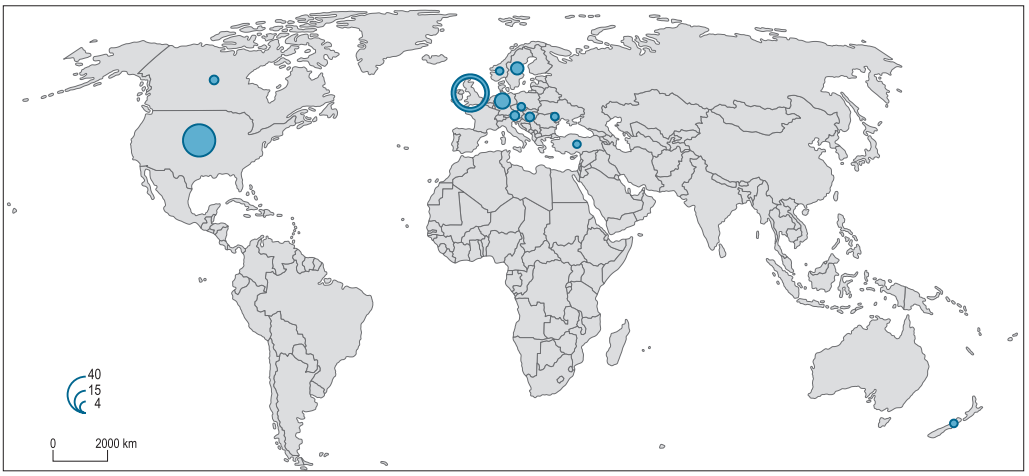


Fig. 6. Referenced publications from the most-cited scholars (with three or more cited publications per person) by the author's place of birth according to the national boundaries of 2025 in Harvey, D. (1969). (The area of pie charts is directly proportional to the quantity represented.) *Source:* Author's analysis.

plies. Their combined share, 60.7 percent, is lower than in Harvey's book (72.7%), but still reveals a firm geographical inequality, as the rest of the world adds up less than 40 percent. The list of countries owing a share of at least 1.5 percent only includes locations in North America (Canada: 7.0%), some other developed economies of the Commonwealth of Nations (Singapore: 5.7%; Australia: 2.8%), continental European countries belonging to the Western Bloc during the Cold War period (Germany: 2.8%; Netherlands: 2.5%; Sweden: 2.3%; Finland: 2.0%; Denmark: 1.6%; France: 1.5%) and China (1.7%) as the only representative of medium- and low-income countries. The absence of post-communist countries is also noteworthy. Still, on the other hand, unlike David Harvey's 1969 volume, Henry Yeung's 2024 work refers to publications by some authors from 13 countries in South America (Brazil and Chile), Africa (Egypt and South Africa), South Asia (India, Bangladesh, Sri Lanka), Southeast Asia (Singapore, Malaysia, Philippines) and East Asia (China, Japan, South Korea) (*Figure 7*). That is a significant step towards internationalising and decolonising international Geography (Ferretti, F. 2020; Schelhaas, B. *et al.* 2020; Radcliffe, S.A. 2022) by incorporating alternative views from outside the core of global academic knowledge production, even if the core's hegemonic position did not diminish, just decreased to a relatively minor extent.

It is remarkable, though, that the spaces of academic publishing remain much more geographically concentrated than the spaces of writing. The top ten publishing platforms with the most publications cited by Yeung, H.W. (2024) are all located in the UK (8 journals) and the USA (2 journals), with the Britain-based journal *Progress in Human Geography* leading with a large margin (86 publications) over *Transactions of the Institute of British Geographers*, another UK-based journal in second place (29 publications) (*Table 3*). Similarly, the massive and increasing dominance of English as the *lingua franca* of international academia (cf. Paasi, A. 2015; Müller, M. 2021) is clearly indicated by the fact that 76.7 percent of the referenced works in Harvey's volume and all referenced publi-

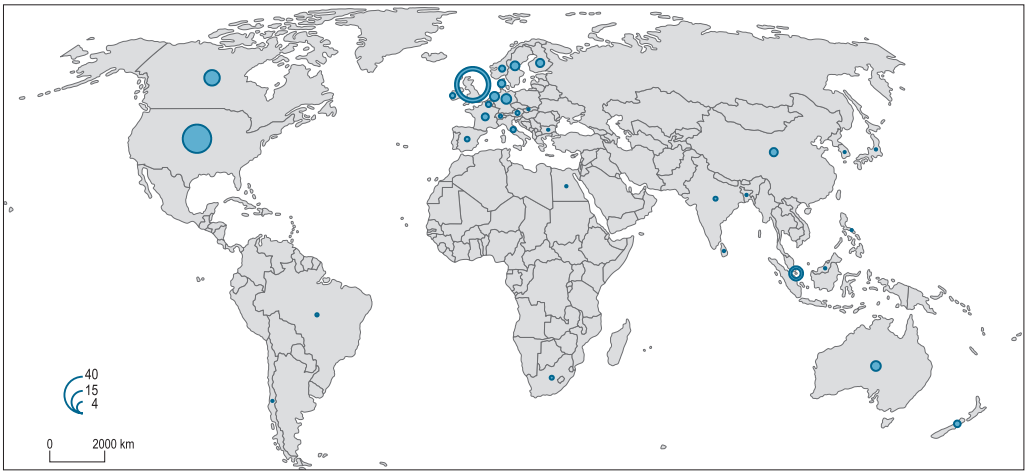


Fig. 7. Referenced publications by the author's institutional affiliation as recorded in the Scopus database in Yeung, H.W. (2024). (The area of pie charts is directly proportional to the quantity represented.) *Source:* Author's analysis.

Table 3. The number of publications cited by Yeung, H.W. (2024) in journals with at least ten referenced publications

Journal	Country	Number of publications
Progress in Human Geography	UK	86
Transactions of the Institute of British Geographers	UK	29
Dialogues in Human Geography	UK	27
Environment and Planning D: Society and Place	UK	21
Environment and Planning A: Economy and Space	UK	20
Regional Studies	UK	18
Economic Geography	USA	16
Journal of Economic Geography	UK	14
Antipode	UK	12
Philosophy of the Social Sciences	USA	11

Source: Author's analysis of Scopus data.

cations in Yeung's book are in English, even if a marginal share of references are English editions of academic works originally published in other languages (e.g. in the case of the English edition of Michel Foucault's publications in French).

Conclusions and discussion

As I explained in the introduction to the article, I did not examine the two selected books in isolation, but rather as a reflection of the scholarly practices and structural characteristics of their time. Consequently, I do not see the differences between the two volumes as a reflection of individual differences in the positions and work of the two authors, but rather as a reflection of the changing scholarly context in which the two authors and everyone else work. My findings, therefore, are *not* aimed at saying something about either David Harvey or Henry Yeung or other scholars in particular. Instead, they want to

illuminate what, how, and why changed in global mainstream Geography between the 1960s and the 2020s. Similarly, given that Geography (along with other disciplines) has continuously operated embedded into a broader academic, social, political, economic and cultural framework, I do not interpret the similarities between the two books primarily as a 'similarity' between two particular authors' scholarly work, but as a sign that certain things have remained structurally relatively unchanged in academic Geography, having had similar effects and consequences over half a century ago and today. My results and the many interesting patterns emerging from them also confirm that this type of reference-centric analysis of selected influential books can contribute relevant findings to interpreting and understanding Geography's past, present, and possible future.

(1) The first important lesson to emerge from the results is that the number of works and authors cited has increased significantly in proportion to the length of the book from Harvey, D. (1969) to Yeung, H.W. (2024). One can assume a combination of several complex factors behind that, of which contemporary geographers have a lot of personal experience, and which are often discussed in specialised works.

(i) The first possible suggestion would be that institutionalised Geography can reflect on a much longer history today than in the 1960s, meaning that scholars can refer to much more literature. In fact, the timeframe of Yeung, H.W.'s (2024) references goes back longer relative to the publication date of the book than in Harvey, D.'s case (1969), but both books predominantly refer to publications not older than 15–20 years.

(ii) The results may indicate the emergence of a new way of seeing in the international geographical community that authors should place their findings much better in the scientific discourse than was typical in previous decades, which necessarily requires broader and more abundant references to the literature. In other words, a new practice of scientific publishing has gained ground, which is rather 'discourse-centric' instead of its old 'personal interest-centric' counterpart. Many decades ago, authors conventionally began their study by presenting the significance they perceived of the chosen topic, justifying the topic's relevance by their personal interest, and intending to answer questions arising from their interest with their results. That is what one may call a 'personal interest-centric' approach. In contrast, the main characteristic of today's scientific operation is that the authors derive their research topic from the ongoing literary discourse, branch off from that discourse, justify the relevance of the subject by referring to the discourse, and primarily intend to contribute new additions to the discourse with their results – what one may call a 'discourse-centric' approach.

(iii) The results also seem to reflect that authors see a relatively greater value and significance of theoretical explanations and findings today compared to empirical findings than half a century ago. This explanation aligns with Yeung, H.W.'s (2024) remark about what he calls 'philosophy envy' in Geography and Nigel Thrift's (2021) comment about the risk of writing 'phiction' (also cf. Puente Lozano, P. 2025).

(iv) 'Academic neoliberalisation' can also be traced behind the significant increase in the number of citations. Especially in a world where scientometric indicators play a prominent role in the development of a researcher's career and opportunities for advancement (e.g. obtaining funding and getting promoted), authors become accustomed to publication practices where, during the writing of the publication, the need to comply with the editors and reviewers of the publication platforms increases, and the intention to adapt the publications to these (perceived or real) editorial expectations increases. A typical manifestation of this is when, based on our individual experiences and knowledge learned from others (e.g. our doctoral supervisor and more experienced colleagues), we feel that we need to include more references in a publication of a given length – either taking additional relevant ide-

as from those references or just using them as 'citationary alibies' (Roy, A. 2020) to make our work seem better grounded and justified – , because otherwise the journal, the editors or the reviewers will find these references too few and they will not accept our manuscript, saying that we either do not know the discourse well enough or that we do not position ourselves appropriately in it. This risk may be particularly acute for authors who are in some way 'outsiders', that is, they work outside the leading global centres of power in a given scientific field, and for their work to be accepted by researchers in the core area, they must particularly "keep in mind the people [they] write about and refer to in [their] work" (Yeung, H.W. *et al.* 2025, p. 250). The increase in the number of references may therefore not (only) stem from the author's motivation and conviction but may also result from the structural characteristics (distortions) of the scientometric-centric academic world and the publishing process in the broader sense, i.e. *shifting concepts of academic validation*. (Contemporary geographers probably have many experiences with such structural pressures and their influences.)

(v) The intensifying pressure of 'fast publishing' (Sheppard, E. 2012) under academic neoliberalisation also creates the pressures of 'fast reading' and 'fast referencing'. To improve their career opportunities, scholars need to publish more and more, which requires reading more and more and citing more and more works – which, given the finite physical capacities of humans, is only possible if scholars 'read into' or 'run through' more and more texts, which they do not have time to read in full, and they cite more and more publications based on the information found in these publications during such 'running through' acts, even if they may not have the capacity to read the entire work thoroughly.

All the above factors probably play a role in the significant increase in the quantity of references experienced over the past decades. However, it would be challenging to disentangle how strong the effect of each factor is compared to the others. In my opinion, this leads to an important research methodological issue, which has a general relevance for the renewed interest in writing and reading practices of human geography (Hones, S. 2025). By more intensively integrating cultural anthropology methods into the geography of science, the geography of knowledge, and the history of geography, *the everyday practices of writing publications* (along with their temporal and spatial disparities) should be studied more deeply, drawing on the approach and methodology of the geography of the everyday (Eyles, J. 1989; Sullivan, R. 2017). If it is technically possible, a meticulous study of the authors' correspondence with editors and publishers could also be part of the analysis, paying special attention to the either soft or more straightforward ways the editors and publishers as 'gatekeepers' are shaping, either along considerations of academic or economic interest, the author's referencing practice during the process of manuscript revision. Such investigations should include how, when, and why an author decides at some point during the writing process to add more references or remove some of them, as well as how structural pressures and the broader academic context shape such decisions, even if subtly.

(2) The theoretical part of this article discussed the proliferation of multi-authored works and journal articles instead of books. Although the average number of authors of the publications cited in the two examined books reflects this general trend, the average value of 1.47 authors/publication for Yeung, H.W. (2024) still indicates the large number and importance of single-author publications in international Geography. Likewise, although the two volumes convincingly illustrate the strongly decreasing role of books in favour of journal articles (with the share of the latter increasing from 35.1 percent in Harvey, D. [1969] to 64.1 percent in Yeung, H.W. [2024]), books and book chapters still make a difference as their one-quarter share of Yeung's references indicates. That is not just the proof of our discipline's peculiarity relative to some other dis-

ciplines, especially in natural sciences, including geosciences (cf. Cupples, J. 2020). It is also powerful feedback that, despite the changing disciplinary expectations in global academia, writing single-authored publications and books remains valuable to shaping agendas.

(3) Of course, there has always been inequality, as some authors have more publications referenced in a book or article, while others have fewer. There have always been, and still are, particularly influential authors. However, a significant difference between Harvey's and Yeung's books is that the proportion of authors cited with at least three publications has grown significantly, and the share of their publications among all referenced publications has increased particularly. There are more and more references and more referenced authors, but a few highly influential top authors, whom one could call 'rockstar geographers', give an increasing proportion of the references. This aligns again with the structural pressures resulting from the quantitative approach of 'academic neoliberalisation'. Due to the extreme proliferation of publications, more and more works by more and more authors become available, but it is impossible to understand and systematically follow all of them thoroughly. Scholars cannot do so. Therefore, academic people tend (or are structurally forced) to follow the publications of a few prominent authors published in the leading publication platforms with the greatest attention so that they can still keep themselves updated about the main directions of the rapidly expanding literature, which is a practical and understandable 'survival strategy' in the vast abundance of information.

(4) Harvey's book contains many references to works in both Human and Physical Geography, with an outlook especially on the results of philosophy and natural sciences. In Yeung's volume, the references mainly point to Human Geography and other social sciences publications. That reflects a remarkable structural shift, where 'Geography', a magic word featured prominently in the titles of both books, increasingly means 'Human Geography' instead of 'Geography' (without adjective), and many authors tend to bring closer Human Geography to social sciences instead of Physical Geography, as Yeung explicitly emphasises that while comparing his seminal book to that of Harvey: "For Harvey, Physical Geography was central because he was trying to bring Human Geography closer to Physical Geography. In my case, it's the opposite." (Yeung, H.W. *et al.* 2025, p. 250). These dynamics are in line with Johnston, R.'s (2009, p. 46) general remark that "[b]efore the 1970s few human geographers identified their discipline as a social science, but many now do".

(5) The proportion of women among the authors of cited works has increased significantly, from zero to about one-quarter. That is a considerable change, but it also indicates that male dominance is still strong in international Geography. The results draw attention to the fact that despite decades of dedicated work aimed at reducing gender inequalities in Geography and making the discipline more inclusive, the transformation of gender power relations is an extremely slow process and can only lead to sufficient results through prolonged and continued efforts. Also, further extensive studies are needed that more thoroughly explore the role of institutional settings, author affinity circles and production contexts in the persistence of gender inequalities, as well as the academic domains where there has been particularly limited progress in reducing gender injustice.

(6) Regarding the geographical background of references, the hegemony of the UK and the USA was very strong half a century ago and is still very strong today, both in terms of cited authors, but even more so in terms of the publication platforms that publish the referenced works. That illuminates the critical role leading publishers as significant beneficiaries of highly uneven power relations in neoliberal academia play in shaping practices of referencing (and writing and reading) in Geography and influencing which geographical ideas will circulate, where, in what form, and how long. From a Central and Eastern Europe perspective,

the absence of post-communist countries is also remarkable, indicating the lasting impact of separating scientific communities in these countries from 'Western' academia and a firm focus on empirical, instead of theoretical, questions in geographical research during the Cold War. At the same time, it is also apparent that this hegemony of authorship has somewhat declined. References to South American, African and Asian authors have also begun to appear, albeit in smaller numbers, indicating a significant qualitative change, the tangible impact of efforts to internationalise and decolonise Geography, even if there is still much to be done in this field.

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Context as ontology and epistemic infrastructure: Rethinking explanation in economic geography

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Abstract

This paper clarifies how mechanism-based explanation can work in economic geography when digital spatial methods are routine. We outline a critical realist orientation that treats socio-spatial context in two linked ways: as an ontological condition that enables or constrains causal powers, and as an epistemic infrastructure that organises the categories through which mechanisms become visible. On this basis, explanation involves specifying mechanisms, scope conditions, and likely empirical traces, while attending to how data systems shape what can be observed. We illustrate the approach with two short cases from Romania. First, spatial models of COVID-19 vaccine uptake identify clustering and diffusion, but explanation arises only when these patterns are situated within a layered health regime shaped by socialist legacies, market reforms, and transnational guidance. Second, typologies of peri-urban change derived from demographic and satellite data are read as traces of spatial figurations generated by property restitution, fragmented planning, and capital flows. In both cases, the same variables can sustain divergent ontological commitments: mechanisms treated as regularities, or mechanisms identified as generative structures with stated conditions of activation. The paper's contribution is practical. It offers a clear statement of the framework, two heuristic illustrations that connect patterns to mechanisms, and a set of design suggestions: state mechanisms and scope before methods; use digital tools to locate and evaluate traces rather than to stand in for mechanisms; combine quantitative outputs with institutional and historical evidence; and document the fit of travelling categories to regional ontologies. We do not claim to settle the debate. Our aim is to show how explanation can proceed in a way that is transparent about assumptions and proportional in its claims. Viewed this way, the paper provides a tractable starting point for cumulative, comparative, theory-building research in and beyond Central and Eastern Europe.

Keywords: mechanism-based explanation, critical realism, geography of knowledge, digital spatial technologies, Central and Eastern Europe

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Introduction

Explanation has long been a central concern in economic geography. Since the critiques of the quantitative revolution, scholars have questioned whether correlations between variables can provide sufficient grounds for causal understanding (Harvey, D. 1969; Sayer, A. 1984). The debate has re-emerged in recent years as big data, spatial econometrics, and machine learning have been mobilised to identify patterns of clustering, diffusion, or association (Kitchin, R. 2014; Shelton, T. *et al*. 2015; Arribas-Bel, D. and Reades, J. 2018). These tools provide new descriptive and predictive capacities, but they also risk reducing explanation to statistically robust regularities. It is now widely recognised across the social sciences that statistical correlation does not by itself provide causal explanation. The challenge, as emphasised by Hedström, P. and Swedberg, R. (1998) and Elster, J. (2015), lies

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in identifying the mechanisms that generate the observed associations.

Critical realism has been one of the most sustained philosophical resources for rethinking explanation in geography, emphasising that mechanisms are real causal powers which operate contingently under enabling and constraining conditions (Bhaskar, R. 1979; Sayer, R.A. 1992). From Bhaskar's foundational claims about a stratified ontology (1975, 1979) to Sayer's influential work in geography (1992, 2010), critical realism has emphasised that mechanisms are real causal powers which operate contingently, depending on enabling and constraining conditions. Early interventions introduced this orientation into economic geography (Johnston, R. 1992; Pratt, A.C. 1995; Yeung, H.W. 1997), insisting that explanatory depth could not be achieved by correlation alone. More recent contributions, such as Yeung, H.W. (2019, 2023), have reformulated this agenda as an explanatory realism, where mid-range theorising specifies mechanisms, scope conditions, and empirical traces while accommodating epistemic pluralism.

A central implication of this approach is that ontological commitments shape epistemological categories and methodological practices. Structures at the level of the real generate practical ontologies, which in turn condition how actors and scientists perceive problems and mobilise categories of investigation (Bhaskar, R. 1979; Yeung, H.W. 2023). The geography of knowledge tradition has long emphasised that categories of analysis travel across regions, often obscuring local generative structures (Livingstone, D.N. 2013; Meusburger, P. *et al.* 2018). For example, Anglo-American concepts of governance, neoliberalisation, or urban resilience have often been imported into Central and Eastern Europe (CEE), where they flatten a stratified regional ontology into empirical anomalies or derivative cases (Stenning, A. 2005; Müller, M. 2019; Nagy, E. 2025). This recursive relation between ontology, epistemology, and methodology is essential for producing adequate explanations.

At the same time, debates about digital spatial technologies have further complicated the relationship between theory, ontology, and method. Kitchin, R. (2014, 2022) challenged claims about the "end of theory" in big data, showing that data are always theory-laden and embedded in socio-technical infrastructures. Thatcher, J. *et al.* (2016) conceptualised "data colonialism," highlighting how digital infrastructures extract, commodify, and centralise data in ways that reproduce long-standing inequalities. More recent work has shown how artificial intelligence, machine learning, and remote sensing embed epistemic assumptions that shape what is visible, measurable, and explainable in space (Dalton, C.M. and Thatcher, J. 2015; Lynch, M. 2022). These critiques converge with critical realist concerns: data infrastructures are not neutral but condition explanatory claims by embedding power relations and epistemic categories.

This article contributes to the latest academic discourse on the role of theory in geographical explanation launched by the recently published contribution of Henry Yeung. More exactly the paper addresses a key issue of Yeung's conception on theory building, namely the role of context. Our arguments are novel and original in the sense that we address the question of context from a twofold perspective: one is offered by the latest technological advancements in data processing (geospatial technologies) and the second is represented by the specific central-eastern European perspective. The paper argues that socio-spatial context should be conceptualised in economic geography not only as an ontological condition for mechanism activation but also as an epistemic infrastructure. Ontologically, mechanisms operate only in stratified contexts shaped by institutional legacies, multi-scalar governance, and material infrastructures. Epistemically, the categories used to identify mechanisms are themselves conditioned by regional ontologies and by the circulation of epistemologies across academic communities. Without attending to both dimensions, mechanism-based explanation risks falling

into two extremes: abstract universalism, which assumes mechanisms travel everywhere without modification, or local exceptionalism, which isolates cases without theorising their generative mechanisms.

The argument develops in dialogue with Yeung, H.W. (2023) call for explanatory realism but extends it in two ways. First, we emphasise that practical ontologies emerging from social structures can transform the epistemic categories of actors, including scientists. This recursive relation between ontology and epistemology changes both categories of perception and categories of investigation. Second, we draw on the geography of knowledge tradition to argue that the circulation of concepts across regions can obscure or reveal local generative structures, thereby producing emergent epistemic effects (Livingstone, D.N. and Withers, C.W.J. 2011; Meusburger, P. *et al.* 2018; Paasi, A. 2025). In this sense, context is both ontological and epistemic: it shapes the activation of mechanisms and the categories through which mechanisms are rendered intelligible.

The implications of this perspective can be demonstrated through Central and Eastern Europe, a region that has repeatedly been cast as derivative or exceptional in economic geography. Post-socialist transformations have produced structured variation in institutional capacity, governance models, and socio-spatial outcomes. Countries across the region liberalised markets, decentralised governance, and integrated into European and global economies, yet outcomes diverged markedly in areas such as foreign investment, innovation, and urban development (Pickles, J. 2010; Smith, A. and Timár, J. 2010). More recent work has argued that these divergences reflect not anomalies but the operation of hybrid and layered mechanisms that combine socialist legacies, neoliberal reforms, and global institutional pressures (Pucherová, D. and Gáfrik, R. 2015; Müller, M. 2019; McElroy, E. and Chelcea, L. 2025). Treating CEE as an ontologically stratified region therefore reveals how socio-spatial context generates mechanisms of wider theoretical significance.

This perspective also carries implications for how digital spatial technologies are incorporated into research design. While GIS (Geographic information system), remote sensing, and spatial econometrics can enrich explanation by identifying clusters, spillovers, or diffusion effects, their contribution depends on whether they are embedded in theory-led approaches. Without theoretical framing, they risk collapsing into correlationism, treating observed regularities as mechanisms in themselves. With theoretical framing, they can provide empirical traces that help identify generative structures. As Wyly, E. (2011) and Dodgson, M. *et al.* (2014) argue, quantitative methods can be repurposed for realist ends if they are aligned with ontological commitments and used to specify scope conditions.

To substantiate this argument, the paper presents two empirical illustrations. The first concerns vaccine uptake in Romania, where the same dataset has been mobilised in two different ways: once through spatial econometric modelling of clustering and diffusion Mare, C. *et al.* (2024) and once through theorisation of hybrid health regimes combining socialist legacies, neoliberal reforms, and global governance Petrovici, N. *et al.* (2023). The second concerns peri-urbanisation, where demographic and satellite data have been used to typologise post-socialist cities as cases of growth and decline (Sandu, A. 2024), but also to theorise "spatial figurations" as stratified outcomes of institutional layering and capital flows (Petrovici, N. and Poenaru, F. 2025). In both cases, the same variables yield flat, correlationist explanations under a positivist ontology, or stratified, mechanism-based explanations under a critical realist ontology.

The contribution of the paper is threefold. Conceptually, we clarify and operationalise a mechanism-based approach that treats socio-spatial context as both an ontological condition and an epistemic infrastructure. Methodologically, we set out research-design principles for integrating digital spatial methods into mechanism-oriented inquiry

by specifying mechanisms and scope conditions in advance, using digital outputs as empirical traces, and documenting the fit of travelling categories to regional ontologies. Empirically, we show that Central and Eastern Europe is not a residue of anomalous data but a region where hybrid institutions and epistemic effects make visible the recursive relation between ontology and knowledge production. More broadly, the paper contributes to debates on the role of theory in economic geography (Barnes, T.J. and Christophers, B. 2018; Rodríguez-Pose, A. 2021), the continuing relevance of post-socialist studies (Müller, M. 2019; McElroy, E. and Chelcea, L. 2025), and the integration of digital spatial technologies into explanatory research (Arribas-Bel, D. and Reades, J. 2018; Ash, J. *et al.* 2018; Kitchin, R. 2022).

The paper proceeds as follows. Section 2 traces the genealogies of mechanism-based explanation in geography, from early critiques of positivism to recent calls for explanatory realism. Section 3 develops the dual framing of socio-spatial context as both ontological condition and epistemic infrastructure. Section 4 considers how digital spatial technologies can be integrated into theory-led mechanism design. Section 5 presents empirical illustrations from CEE. Section 6 concludes with implications for advancing context-sensitive, mechanism-based explanation in economic geography.

Genealogies of mechanism-based explanation in geography

The search for causal explanation in geography has unfolded through successive phases of critique, reformulation, and methodological experimentation. The first decisive break came with the critique of the quantitative revolution. David Harvey's *Explanation in Geography* (1969) reflected the ambition to construct nomothetic science through statistical laws, but it also revealed the fragility of reducing explanation to correlations. By the late 1970s, critical interventions (Harvey, D. 1969; Wisner, B. 1978; Soja, E.W. 1980) highlighted how spatial-economic patterns could not be understood without reference to political economy, class relations, and power. These early critiques already anticipated the call for mechanism-based reasoning, since they questioned whether universal laws were feasible in open social systems.

Realist philosophy provided a systematic alternative. Bhaskar, R. (1975) introduced the notion of a stratified ontology, distinguishing the real (generative structures), the actual (events), and the empirical (observations). Sayer, R.A. (1984, 1992) adapted these insights into geography, insisting that explanation required uncovering mechanisms operating under contingent conditions, not just observable regularities. Johnston, R. (1992) pressed this critique further by emphasising that the closure assumed in positivist models was incompatible with the openness of social systems. Pratt, A.C. (1995) and Yeung, H.W. (1997) made these philosophical principles operational for economic geography: mechanisms should be traced through comparative strategies, mixed methods, and multi-scalar analysis.

During the 2000s, empirical work demonstrated the potential of this approach. Glasmeier, A.K. and Farrigan, T.L. (2007) showed how urban segregation and economic isolation emerge from the contingent interplay of labour markets, housing institutions, and racialised practices, rather than from single-variable correlations. Evolutionary economic geography (Boschma, R.A. and Frenken, K. 2006; Boschma, R.A. and Martin, R. 2010; Clark, G.L. *et al.* 2018) proposed a mechanism-oriented account of regional development, where related variety, branching, and path dependence were not abstract models but causal processes embedded in institutional contexts. These contributions also aligned with broader methodological debates in social science, where Hedström, P. and Swedberg, R. (1998) and Elster, J. (2015) promoted mechanism-based explanation and mid-range theorising.

A recurrent ambiguity has concerned the relation between mechanisms and processes.

While often used interchangeably, critical realist accounts distinguish between them. Processes denote sequences of events observable at the empirical and actual levels, while mechanisms refer to the generative structures that make such processes possible (Sayer, A. 2002; Yeung, H.W. (1997). For example, "*urban sprawl*" may appear as a general process across contexts, but the mechanisms producing it differ in the United States through suburban property regimes, in post-socialist Europe through restitution policies and fragmented planning systems (Stenning, A. 2005; Hirt, S.A, 2012). Mechanism-based explanation, thus, requires moving beyond descriptive process-tracing to the identification of causal powers activated under specific socio-spatial conditions.

The 2010s brought confrontation with the digital turn. Wyly, E. (2011) asked whether quantitative tools could be repurposed for radical ends when re-embedded in realist ontology. Kitchin, R. (2014) dismantled the rhetoric of the "*end of theory*" showing how data are always theory-laden and embedded in socio-technical infrastructures. Thatcher, J. *et al.* (2016) conceptualised "*data colonialism*" as a mode of dispossession, linking the epistemic power of digital infrastructures to broader geographies of inequality. Critical GIS scholarship reinforced these insights: Pickles, J. (1995), Schuurman, N. (2000), Goodchild, M.F. (2007), and Ash, J. *et al.* (2018) demonstrated that spatial data infrastructures are not neutral but privilege certain ways of knowing, thereby shaping which mechanisms can be rendered visible.

More recent debates have returned explicitly to the methodological core. MacLeavy, J. (2019) argued that in open systems the distinction between mechanisms, processes, and contexts cannot be neatly separated. Crespi, F. and Quatraro, F. (2015) insisted that mechanisms are never universal but conditional on institutional and spatial settings. Dodgson, M. *et al.* (2014) applied this reasoning to innovation ecosystems, where non-linear and multi-scalar interactions require mechanism-based explanations attentive to complexity. Yeung, H.W. (2019, 2023), reformulated this orientation as "*explanatory realism*" a pragmatic stance where mid-range theories identify mechanisms and scope conditions, while recognising epistemic pluralism.

Since 2020, further contributions have underscored both the opportunities and the risks of mechanism-based explanation. Ash, J. *et al.* (2018) called for moving beyond critique to reconstruct explanatory practices, while Lynch, M. (2022) examined how data infrastructures codify particular epistemologies of space. Paasi, A. (2025) extended these debates into regional theory, showing that spatial categories themselves are ontological constructions shaping how mechanisms are identified. At the same time, the geography of knowledge tradition (Livingstone, D.N. 2013; Meusburger, P. *et al.* 2018) highlights the recursive relation between ontology, epistemology, and methodology: real structures generate practical ontologies that condition how actors and scientists perceive problems and mobilise categories of investigation (Bhaskar, R. 1979; Yeung, H.W. 2023).

This issue is particularly salient in post-socialist studies. Imported epistemologies often flatten stratified regional ontologies into derivative anomalies, reducing CEE to a site of empirical irregularities rather than a source of theory (Pucherová, D. and Gáfrik, R. 2015; Müller, M. 2019; Nagy, E. 2025; McElroy, E. and Chelcea, L. 2025). By contrast, mechanism-based reasoning allows treating the region as a generative site of theory production, where institutional hybridity and layered sovereignties create mechanisms of wider relevance (Stenning, A. 2005; Petrovici, N. 2012).

Taken together, this genealogy charts a trajectory from the critique of positivism, through the adoption of realist philosophy, to methodological embedding and contemporary debates about digital epistemologies. The unifying thread is a persistent concern with context: mechanisms operate contingently in open systems, and explanatory adequacy requires both ontological specification and epistemic reflexivity

Socio-spatial context as ontological condition and epistemic infrastructure

In order to advance mechanism-based explanation, socio-spatial context must be analysed in two complementary ways: as an ontological condition that enables or constrains the operation of mechanisms, and as an epistemic infrastructure that frames the categories through which mechanisms are identified. Both perspectives are necessary if causal explanation in economic geography is to move beyond the limits of either abstract universalism or local exceptionalism.

Ontological conditions refer to the institutional, political, and material structures that shape the environments in which mechanisms are activated. Critical realism emphasises that mechanisms are real causal powers, but their effects depend on the stratified contexts in which they are embedded (Bhaskar, R. 1975; Sayer, R.A. 1992). Comparative research has shown how similar processes yield divergent outcomes under different institutional arrangements. For example, foreign direct investment generates distinct developmental trajectories depending on whether states exercise strategic coordination or rely on liberal market regimes (Pickles, J. 2010; Smith, A. and Timár, J. 2010). Evolutionary economic geography has further demonstrated that path dependence, related variety, and branching operate through concrete industrial structures and governance systems rather than as universal processes (Boschma, R.A. and Martin, R. 2010; Balland, P.-A. *et al.* 2019). These studies illustrate that the explanatory power of mechanisms derives not only from their existence but also from their embedding in particular socio-spatial conditions.

Epistemic infrastructures concern the frameworks of knowledge through which mechanisms are rendered visible. Categories of investigation are not neutral descriptors but emerge within scholarly traditions, data practices, and institutional routines (Livingstone, D.N. 2013; Meusburger, P. *et al.* 2018). What counts as a valid mechanism is shaped by epistemological assumptions embedded in these infrastructures. For example, the circulation of Anglo-American concepts of governance or neoliberalisation into post-socialist contexts has often obscured the specific institutional legacies of the region, reclassifying them as anomalies instead of potential sources of explanation (Stenning, A. 2005; Müller, M. 2019; Nagy, E. 2025). Recent debates highlight that epistemic infrastructures are themselves productive: they generate categories that shape empirical research and theory formation (Barnes, T.J. and Christophers, B. 2018; Paasi, A 2025). Recognising this role is crucial for assessing how knowledge practices enable or constrain mechanism identification.

The interaction between ontological and epistemic dimensions is recursive. Real structures generate practical ontologies that influence how social actors and scientists perceive and categorise problems (Bhaskar, R. 1979). These categories, once institutionalised in research practices, shape subsequent investigations, determining how mechanisms are conceptualised and tested. Yeung, H.W. (2023) reformulates this relationship within his framework of explanatory realism, arguing that mid-range theorising must remain reflexive about the epistemic assumptions that guide mechanism identification. Contributions from the geography of knowledge have reinforced this argument by showing that categories travelling across regions generate emergent epistemic effects when applied in new contexts (Livingstone, D.N. and Withers, C.W.J. 2011; Jessop, B. and Sum, N.-L. 2022). Adequate explanation therefore requires attention both to the structural conditions that activate mechanisms and to the epistemic infrastructures that make them intelligible.

This dual framing is particularly significant for post-socialist studies. The region has often been interpreted through concepts that position it as derivative of Western trajectories or as an empirical exception. Imported categories such as "*transition*" or "*convergence*" have sometimes flattened the stratified institutional landscape of Central

and Eastern Europe into anomalies, thereby obscuring the generative mechanisms at work (Pucherová, D. and Gáfrik, R. 2015; Müller, M. 2019; Nagy, E. 2025). Treating CEE instead as an ontologically stratified formation highlights how socialist legacies, neoliberal reforms, and global integration interact to create hybrid mechanisms that cannot be reduced to exceptions. At the same time, recognising the epistemic infrastructures through which categories travel sheds light on how external concepts shape the types of explanations that are legitimised. Recent interventions argue that post-socialism continues to serve as a site of theory production when analysed as an interaction between institutional layering and epistemic circulation rather than as a residual descriptive label (McElroy, E. and Chelcea, L. 2025; Kinossian, N. 2022). This perspective aligns with the broader call to treat regional ontologies as sources of explanatory innovation rather than as deviations from supposedly universal models.

Attention to both ontological and epistemic dimensions is also essential in relation to digital spatial technologies. Tools such as GIS, remote sensing, and spatial econometrics can provide valuable empirical traces of clustering, diffusion, or association. Yet these traces contribute to causal explanation only when interpreted within theory-led designs that identify the causal mechanisms involved (Wyly, E. 2011; Dodgson, M. *et al*. 2014; Kitchen, R. 2022). Without such embedding, digital methods risk reproducing correlationism, treating observed regularities as mechanisms in themselves. With theoretical framing, however, they can support mechanism-based explanation by situating empirical observations within stratified socio-spatial contexts. Recent work on artificial intelligence and machine learning demonstrates this tension: while these methods can uncover patterns at multiple scales, their explanatory value depends on whether results are incorporated into mechanism-oriented accounts of spatial processes (Ash, J. *et al.* 2018; Shelton, T. 2024). Digital infrastructures therefore exemplify how ontological and epistemic dimensions intersect: the data they produce are conditioned by socio-technical structures, while the categories through which they are mobilised shape explanatory outcomes.

Taken together, these points indicate that socio-spatial context must be treated along two linked dimensions. As an ontological condition, it sets the enabling and constraining environment in which mechanisms operate. As an epistemic infrastructure, it organises the categories and practices through which mechanisms are made legible. Attending to both avoids the twin errors of universalism and exceptionalism. For Central and Eastern Europe, this means tracing how institutional legacies meet circulating epistemologies and how this encounter shapes the identification of mechanisms whose scope and limits can be specified beyond the region.

Digital spatial technologies and mechanism-based explanation

The expansion of digital spatial technologies has altered both the empirical possibilities and the epistemological challenges of explanation in economic geography. GIS, spatial econometrics, remote sensing, and, more recently, artificial intelligence and machine learning, have been promoted as offering unprecedented capacity to capture spatial regularities, identify clusters, and model diffusion processes (Goodchild, M.F. 2007; Kitchen, R. 2014, 2022; Arribas-Bel, D. and Reades, J. 2018). These tools provide descriptive power at large scales and across multiple dimensions of socio-spatial life. Yet their contribution to causal explanation depends on whether they are embedded within theory-led research designs. Without theoretical framing, they risk reproducing correlationism in a new guise, substituting pattern detection for identification of generative mechanisms (Wyly, E. 2011).

Critical realist perspectives highlight that data do not speak for themselves but must be situated within an ontology that distin-

guishes between events, mechanisms, and structures (Bhaskar, R. 1975; Sayer, R.A. 1992). From this standpoint, digital traces can serve as empirical evidence of causal processes, but they cannot define those processes without theory. Data infrastructures also embed assumptions about what counts as a valid observation. Lynch, M. (2022) further argues that the digitalisation of geography embeds new power relations into explanatory practices by privileging what is visible and measurable over what is institutionally or socially latent. Mechanism-based reasoning requires treating these outputs as potential empirical traces of deeper structures rather than as explanations in themselves.

The tension is especially evident in applications of spatial econometrics and machine learning. Models of autocorrelation, clustering, or diffusion identify patterns across territorial units, but they do not by themselves reveal why certain outcomes occur. For example, clustering of foreign direct investment in specific regions may reflect the operation of multiple mechanisms, including state industrial policy, labour market institutions, and global production networks. Only comparative and historically grounded analysis can disentangle which mechanisms are activated under particular conditions (Boschma, R.A. and Martin, R. 2010; Pickles, J. 2010). Machine learning techniques that classify urban growth trajectories or predict household mobility likewise risk producing correlationist explanations unless their results are situated within mechanism-oriented accounts of urban governance, land regimes, or infrastructure development (Shelton, T. 2024).

Digital technologies also shape epistemic infrastructures by defining categories of analysis. Remote sensing data, for instance, classify land cover and land use according to global taxonomies, often obscuring local institutional meanings. Similarly, the use of "standard" econometric indicators of regional competitiveness imports categories developed in Western economies into post-socialist settings, potentially reinterpreting institutional hybridity as deviation or anomaly (Stenning, A. 2005; Müller, M. 2019; Nagy, E. 2025). In this sense, digital infrastructures exemplify how epistemological categories travel and are institutionalised, influencing which mechanisms can be identified. Paasi, A. (2025) has argued that spatial categories are themselves ontological constructions that condition explanatory reasoning; when embedded in digital platforms, these categories carry strong epistemic effects.

Central and Eastern Europe illustrates both the opportunities and the risks of digital methods for mechanism-based explanation. In the field of public health, spatial econometric models of vaccine uptake in Romania identified clustering and diffusion patterns across counties (Mare, C. *et al.* 2024). While such models capture empirical regularities, they do not specify why uptake diverged across similar institutional environments. A mechanism-based account situates these patterns within the layered health regime shaped by socialist legacies, neoliberal reforms, and transnational governance (Petrovici, N. *et al.* 2023). In this case, digital tools provide valuable traces, but explanation requires theorising the institutional mechanisms that generate the observed clusters.

A similar contrast is visible in urban studies. Satellite data and demographic statistics have been used to typologise post-socialist cities into trajectories of growth and decline (Sandu, A. 2024). While typologies describe variation, they risk reifying processes such as peri-urbanisation as homogeneous outcomes. By contrast, mechanism-based analysis treats peri-urbanisation as the contingent product of property restitution, fragmented planning, and capital inflows (Petrovici, N. and Poenaru, F. 2025). Here again, digital technologies supply essential empirical material, but explanatory adequacy depends on situating them within stratified socio-spatial contexts.

This recursive relation between digital methods and mechanism-based reasoning has broader implications for economic geography. First, it calls for methodological pluralism: quantitative models, qualitative evidence, and historical comparison must

be combined to identify the causal powers at work. Second, it highlights the importance of reflexivity about epistemic infrastructures: categories embedded in data collection and processing influence what becomes visible as a mechanism. Third, it shows the value of digital technologies is conditional: their explanatory power is realised only when used within theory-led research designs that account for institutional and spatial variation.

Recent work supports this perspective. Dodgson, M. *et al.* (2014) show that innovation ecosystems require mechanism-based accounts that integrate digital data with institutional analysis. Jessop, B. and Sum, N.-L. (2022) stress that epistemic reflexivity is central to avoiding the reification of categories produced by digital infrastructures. Shelton, T. (2024) demonstrates that machine learning models in urban geography generate useful empirical insights only when interpreted through theories of governance and inequality. Together, these contributions underscore that digital technologies are neither neutral instruments nor autonomous explanatory devices; they are epistemic infrastructures whose value depends on their integration into mechanism-oriented research designs.

For post-socialist studies, this dual framing is especially important. Imported digital categories, such as "*transition economies*" or "*emerging markets*" can flatten regional ontologies and obscure hybrid institutional mechanisms (McElroy, E. and Chelcea, L. 2025). Yet when contextualised within local histories and comparative frameworks, digital data can illuminate how socialist legacies interact with global pressures to produce novel causal configurations. In this way, Central and Eastern Europe is not merely a site of empirical testing but a region where digital infrastructures and mechanism-based reasoning together reveal processes of wider theoretical significance.

Read in this way, digital spatial technologies extend the empirical reach of geography but do not by themselves provide explanation. Their outputs should be read as traces of causal mechanisms situated in socio-technical infrastructures and filtered through specific analytic categories. Coupled with a critical realist ontology and a reflexive epistemology, these tools can help connect patterns to structures and events to generative powers. Without such embedding, they risk reinstalling a thin positivism through computation. For economic geography, and for Central and Eastern Europe in particular, the task is to use digital infrastructures as components of theory-led, mechanism-oriented designs rather than as self-standing explanatory devices.

Empirical illustrations from Central and Eastern Europe

The argument can be grounded in two short illustrations from Romania that work with the same families of variables but produce different kinds of explanation. The first concerns vaccine uptake and shows how spatial models identify robust patterns that require institutional specification to count as explanation. The second concerns peri-urban change and shows how typologies drawn from demographic and satellite data can be reinterpreted as traces of generative mechanisms that vary across metropolitan settings. In both cases the move from pattern to explanation depends on the dual view of context developed above and on the mid-range orientation in explanatory realism (Yeung, H.W. 2019, 2023; Paasi, A. 2025).

Vaccine uptake in Romania

Mare, C. *et al.* (2024) analyse county and local data on COVID-19 vaccination together with socio-economic covariates. Spatial econometric specifications identify positive spatial autocorrelation and diffusion effects. These results show that vaccine uptake clusters and that neighbouring units co-vary in a systematic way. Poverty, settlement structure and religious composition are correlated with the outcome and some effects propagate across administrative boundaries. Read

at the level of the actual and the empirical, these findings support a model in which mechanisms are treated as regularities that may travel to similar settings subject to further testing. The account is predictive and precise, but the causal powers that produce the observed clusters remain unspecified.

Petrovici, N. *et al.* (2023) re-embed the same empirical patterns in a stratified ontology of hybrid health regimes. The analysis reconstructs how socialist legacies of primary care and access, post-1990s market reforms, and transnational governance produced distinct organisational arrangements for vaccination logistics, information and trust. In this reading the mechanisms are generative structures. They include institutional layering in family medicine and public health, the organisation of professional authority and distrust, and the circulation of clinical and managerial guidelines across national and international bodies. Spatial clusters are treated as empirical traces of these mechanisms rather than as explanations in themselves. The models remain useful because they indicate where the mechanisms are likely to be active and how their effects are distributed. Explanation requires stating the scope conditions under which particular combinations of mechanisms operate, for example the joint presence of fragmented primary care, targeted private provision and strong vertical guidance.

This illustration clarifies the role of digital and statistical tools within mechanism-oriented research. Spatial econometrics shows where and how outcomes co-vary. It does not identify causal powers independently of theory and institutional evidence. The realist account provides that identification by linking traces to structures and by specifying conditions of activation. The result is consistent with a pragmatic explanatory realism that evaluates explanation by its capacity to uncover context-dependent mechanisms with stated scope rather than by predictive fit alone (Yeung, H.W. 2019, 2023). It also aligns with recent work on data infrastructures and epistemic effects, which cautions that model outputs codify assumptions about observables and therefore require reflexive interpretation (Ash, J. *et al.* 2018; Kitchin, R. 2022; Lynch, M. 2022).

Peri-urban change in Romania

Sandu, A. (2024) combines demographic indicators with satellite-derived measures of built-up area to classify post-socialist cities into trajectories of growth and decline. The typology is clear and comparable across many cases. If taken as sufficient for explanation, however, the mechanism behind peri-urban expansion during demographic decline is the correlation itself. The city appears as a bounded unit that moves across states defined by the data. The causal powers remain implicit.

Petrovici, N. and Poenaru, F. (2025) work with the same kinds of variables but interpret them within a framework that treats peri-urban morphologies as spatial figurations. The analysis reconstructs how property restitution, fragmented planning, state and private capital in land and infrastructure markets, and the labour-housing nexus interact across metropolitan regions. In this reading the mechanisms are again generative and multi-scalar. Built-up change and demographic decline are empirical traces of these mechanisms. The concept of spatial figuration specifies how particular configurations of institutional and economic relations generate distinct peri-urban outcomes and it states when these mechanisms are likely to combine. The focus shifts from the typology of outcomes to the identification of causal powers and to the conditions under which they operate.

As in the health case, digital sources are indispensable for identifying patterns at scale, but they require theoretical embedding to yield explanation. Remote sensing classifications and demographic indicators supply the patterns. Mechanism-based analysis supplies the link to structures and to scope conditions. This approach avoids treating Central and Eastern Europe as a set of anomalies and instead treats it as a region in which hybrid mechanisms are analytically visible and travel under specified conditions (Grubbauer, M.

and Kusiak, J. 2012; Paasi, A. 2025). It also responds to concerns about imported categories in post-socialist research by showing how regional ontologies shape what counts as a mechanism and how categories must be inspected for fit before they are used for explanation (Müller, M. 2019; McElroy, E. and Chelcea, L. 2025; Nagy, E. 2025).

Synthesis

The two illustrations support three claims that follow directly from the theoretical argument. First, the same data can sustain different ontological commitments. If mechanisms are defined as regularities, explanation remains at the level of the actual and the empirical. If mechanisms are defined as generative structures, explanation requires institutional and historical specification and a statement of scope. Second, digital spatial technologies are best treated as epistemic infrastructures that produce empirical traces to be linked to mechanisms. Their value for explanation rises when model outputs are read through theory-led designs and when categories embedded in data collection and processing are made explicit (Ash, J. *et al.* 2018; Kitchin, R. 2022; Lynch, M. 2022). Third, treating Central and Eastern Europe as an ontologically stratified region changes the research questions we ask and the categories we use. Explanation depends on how socialist legacies, post-socialist reforms and transnational pressures interact to produce outcomes. This perspective avoids universalism and exceptionalism and supports comparative work in which mechanisms travel only under clearly stated conditions (Yeung, H.W. 2019, 2023; Paasi, A. 2025).

These illustrations therefore meet the empirical expectations that follow from the rest of the paper. They move from patterns to mechanisms with explicit scope conditions. They integrate digital methods without conflating pattern with explanation. They show how a regional ontology shapes epistemic categories and, in turn, explanatory claims.

Implications for mechanism-based research design

The analysis above has two practical implications for how we design studies in economic geography. First, explanation should proceed by specifying mechanisms and scope conditions before the choice of methods. Second, digital spatial technologies should be treated as epistemic infrastructures that yield empirical traces to be interpreted within a stratified ontology. In what follows we set out design principles that follow from these claims and indicate how they relate to recent work in the field.

A mechanism-oriented design begins with a clear statement of the causal powers that are hypothesised to operate, the socio-spatial conditions under which they are activated, and the empirical traces they are expected to leave. This framing translates the realist distinction between structures, events and observations into research practice (Bhaskar, R, 1975; Sayer, R.A. 1992). It is also consistent with explanatory realism, which evaluates theories by their ability to recover context-dependent mechanisms rather than by predictive fit alone (Yeung, H.W. 2019, 2023). In empirical terms this means formulating propositions that link a set of institutional arrangements to a pattern that can be observed and then stating the conditions under which the link should hold. For example, a claim about related variety and branching in regional development must identify the industrial and governance configurations through which that mechanism operates and the range of contexts in which it is expected to travel (Boschma, R.A. and Martin, R. 2010; Balland, P.-A. *et al.* 2019).

Comparative strategy follows from this orientation. Cases should be selected to vary the conditions that are thought to enable or constrain a mechanism so that we can test its operation across settings. This can be done within a country, across countries within a region, or across regions where institutional architectures are comparable. The point is to avoid both abstract universalism and local exceptionalism by stating where the mecha-

nism is likely to work and where it is not. In Central and Eastern Europe, for instance, the interaction between socialist legacies and market reforms can be treated as a structured source of variation rather than as a residual context, which allows mechanism-based claims to be examined across different institutional mixes (Kinossian, N. 2022; McElroy, E. and Chelcea, L. 2025; Paasi, A. 2025).

The use of digital spatial technologies should be aligned with these aims. Spatial econometrics, remote sensing and machine learning can identify clusters, discontinuities and co-variations at scale, but these outputs do not by themselves specify causal powers. Their role in a mechanism-oriented design is to locate and describe empirical traces and to help adjudicate between rival mechanism claims. This requires transparent reporting of model choices, variable construction and classification schemes, alongside a discussion of the epistemic assumptions embedded in data infrastructures (Ash, J. *et al*. 2018; Kitchin, R. 2022; Lynch, M. 2022). It also requires combining quantitative outputs with historical and institutional evidence that bears directly on the proposed mechanisms. The goal is not method triangulation for its own sake but the use of diverse materials to identify and test the action of causal powers in stratified contexts (Wyly, E. 2011). A further implication concerns categories. Because categories travel with data infrastructures and scholarly traditions, researchers should document how key constructs are defined and whether they fit the regional ontology under study. This is particularly important when standard indicators and taxonomies originate in settings with different institutional architectures. Reflexive treatment of categories is part of the research design rather than an afterthought, since misfit can generate spurious regularities or hide relevant mechanisms (Barnes, T.J. and Christophers, B. 2018; Jessop, B. and Sum, N.-L. 2022; Paasi, A. 2025). In practical terms, this entails justifying the transfer of constructs, adjusting them where needed, and indicating how these decisions affect the identification of mechanisms.

Evaluation criteria also follow from the foregoing. We propose four that can be applied to mechanism-based studies in economic geography. First, ontological clarity: are the mechanisms, structures and scope conditions explicitly stated and distinguished from the empirical patterns they are meant to explain. Second, evidential fit: do the empirical traces produced by digital and non-digital methods correspond to the expected signs of the proposed mechanisms. Third, contextual specificity: are the institutional and spatial conditions under which the mechanism operates described in sufficient detail to allow comparison and limited generalisation. Fourth, epistemic reflexivity: are the categories and data infrastructures that structure observation made explicit and assessed for fit with the regional ontology (Ash, J. *et al*. 2018; Yeung, H.W. 2019; Kitchin, R. 2022; Paasi, A. 2025).

These principles have consequences for field-building. They encourage cumulative work in which mechanisms are carried across studies together with their scope conditions, rather than being replaced whenever new data become available. They favour designs that combine digital traces with institutional analysis and comparative evidence so that results can be interpreted as more than surface regularities. They also support the status of Central and Eastern Europe as a site for concept formation, since hybrid institutional arrangements in the region make certain mechanisms analytically visible and therefore useful for theory beyond the region when scope is stated clearly (Kinossian, N. 2022; McElroy, E. and Chelcea, L. 2025).

Finally, the approach outlined here has limits that should be recognised. Mechanisms in open systems rarely operate in isolation, which makes identification and adjudication demanding. Digital infrastructures change rapidly and carry evolving epistemic effects that must be tracked. Not all mechanisms will leave traces that can be captured by current data. These constraints do not weaken the case for mechanism-based explanation. They indicate the need for careful design, transpar-

ent reporting and cumulative comparison so that claims about causal powers remain tied to the contexts in which they operate and the categories through which they are known.

Conclusions

This paper has argued that explanation in economic geography requires treating socio-spatial context as both an ontological condition and an epistemic infrastructure. Mechanisms operate in stratified settings shaped by institutions, politics and material arrangements (Bhaskar, R. 1975; Sayer, R.A. 1992). At the same time, the categories through which we recognise mechanisms are produced within data systems and scholarly traditions that travel unevenly across regions (Livingstone, D.N. 2013; Meusburger, P. *et al*. 2018; Lynch, M. 2022). When these two dimensions are addressed together, we can avoid the twin errors of abstract universalism and local exceptionalism. The paper developed this claim in dialogue with explanatory realism. We adopted Yeung's call to judge theories by their capacity to recover context-dependent mechanisms and to state scope conditions, and extended it by foregrounding how practical ontologies shape the epistemic categories of both social actors and researchers (Bhaskar, R. 1979; Yeung, H.W. 2019, 2023). We showed that digital spatial technologies are valuable when used to locate empirical traces for theory-led inquiry but do not by themselves supply causal powers (Wyly, E. 2011; Ash, J. *et al*. 2018; Kitchin, R. 2022). The two illustrations from Central and Eastern Europe made this point concrete. The same datasets can yield correlationist accounts or mechanism-based explanations depending on how they are embedded in institutional histories and regional ontologies.

The contribution is threefold. First, the paper clarifies how mechanism-based explanation in geography depends on both ontological specification and epistemic reflexivity. Second, it offers design principles for mechanism-oriented research that link causal claims, scope conditions and empirical traces, and that align digital methods with comparative and historical evidence. Third, it reframes Central and Eastern Europe as a productive site for concept formation rather than a repository of anomalies, consistent with recent reconsiderations of post-socialist studies (Grubbauer, M. and Kusiak, J. 2012; Kinossian, N. 2022; McElroy, E. and Chelcea, L. 2025; Paasi, A. 2025).

The analysis points to a short research agenda. Future studies should code institutional and governance features alongside standard quantitative indicators so that proposed mechanisms can be tested across clearly stated conditions (Boschma, R.A. and Martin, R. 2010; Balland, P.-A. *et al*. 2019). Reporting should document category choices and data lineage to make the epistemic effects of digital infrastructures visible and assessable by readers (Barnes, T.J. and Christophers, B. 2018; Kitchin, R. 2022). Comparative designs in CEE and beyond should vary enabling and constraining conditions deliberately so that results speak to limited generalisation rather than to universal laws.

Mechanisms in open systems rarely act alone and traces are often noisy. These limits are real, but they are also the reason to adopt designs that bring together theory, history and digital observation. If explanation is to remain central to economic geography, it must connect patterns to structures and events to causal powers under specified conditions. Treating context as both ontological and epistemic provides one practical route to that end.

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Global production networks: A geographical review of a research tradition

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Abstract

This paper analyses the academic literature on global production networks (GPN) from 2000 to 2024 based on data from the Scopus database. It focuses on the uneven international landscape of authors, publications, funding sources, publishers and citations in the GPN literature compared with the firm Anglo-American hegemony prevailing in international geography in general. The article begins with an overview of the existing literature on asymmetrical power geometries in geography as a discipline, as well as the scholarly project of internationalising, worlding and decolonising geography. After that, it presents the research methodology of the current study. The results section highlights the temporal dynamics of the rise of the GPN research tradition. It reveals the multidisciplinary nature of this field of research and its solid interest in the industrial sector and the geographical dimension of the economy. It identifies the existence of a 'primary European core' and a 'secondary Asian core' rather than Anglo-American hegemony in the GPN literature, as reflected in the authors, funding sources and case study areas. It also confirms the dominance of Manchester and Singapore as leading global centres of calculation, as well as the still massive British hegemony over major publishing platforms, which is particularly strong in terms of citation-attracting ability. Meanwhile, the results reaffirm the marginalised position of most of the Global South. Finally, our study examines the uneven geography of GPN literature from authors in East Central Europe as a global semi-periphery and draws some general lessons for the geographies of science and the future possibilities of promoting the process of internationalisation, decolonisation and worlding of geographical research.

Keywords: decolonial, geographies of science, geopolitics of knowledge, Global North/Global South, global production networks, scientometrics, Scopus, worlding

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Introduction

This paper examines academic literature on global production networks, which have emerged as one of the most vibrant fields of research in Economic Geography over the last quarter-century. After earlier attempts to scrutinise the spatially fragmented production systems in the global economy along the concepts of global commodity chains (GCC) and global value chains (GVC) especially in the discipline of Economic Sociology from the mid-1990s onward, the sweeping and, at that time, seemingly unstoppable wave of globalisation after the (first) Cold War period also resulted in a new conceptual approach in the early 2000s, mainly invented by economic geographers (along with some representatives of International Political Economy) and commonly called GPN (Coe, N.M. 2021). Although the GPN concept soon became part of the international mainstream in economic

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geographical research, also firmly influencing neighbouring disciplines and co-evolving with the GCC and GVC approaches through constructively critical dialogues (Coe, N.M. and Yeung, H.W. 2015; Coe, N.M. 2021), it has a remarkable feature from the perspective of geographies of science inasmuch it has decisively been informed from the very beginning by empirical studies about East Asia and massively shaped by academic collectives in Southeast Asia – instead of North American or Western European scholars taking the lead without competitors (Yeung, H.W. 2024, 2025; Yeung, H.W. *et al.* 2025).

Considering the peculiar geography of the origins of the GPN approach, it is an intriguing question to consider how asymmetrical power geometries, a significant characteristic of contemporary global science, including the discipline of geography, have played out in the production of GPN knowledge. That is the topic of the current article, which, based on an in-depth study of scientometric data from the Scopus database, aims to scrutinise the fundamental structural patterns of the GPN literature. After a conceptual overview of the relevance, potentials and limits of such an analysis from the perspective of geographies of science and geopolitics of knowledge and discussing the major methodological features of the study, the paper will offer an overview of the temporal dynamics of the quantity of GPN publications and the citations they have attracted mainly between 2000 and 2024. This part of the study will include analysing the structure of GPN literature in terms of particular research topics, academic disciplines and document types (e.g. journal articles, books, book chapters). In the following steps, we will examine the most published authors and the most cited publications in the field, as well as the leading funding sources and publishing platforms, all from a geographical perspective. Motivated by the geographical focus of the Hungarian Geographical Bulletin and our positionality, we will also pay attention to the peculiar position of East Central Europe in those broader international power geometries. Finally, we will conclude our study by highlighting the relevance of our findings and their conceptual contribution to the international scholarly discourses on global production networks, the geographies of knowledge production, and the decolonising and worlding of geographical research.

Spatially uneven power relations in geographical knowledge production

Knowledge production has never been evenly distributed geographically but has always been characterised by spatial inequalities resulting from asymmetrical power relations in human societies. Although innovative ideas can emerge virtually anywhere, academic knowledge production is strongly reliant on specific *knowledge environments*, which include capable human beings (from scholars to students to administrative staff) and the interactions between them, adequate financial and material resources (from funding to research equipment and libraries), efficient organisational structures, clear, transparent and reasonable institutional rules and logics, open-minded scientific cultures, and a supportive social context where science and scientists enjoy social reputation and meet a general social interest in their findings (Meusburger, P. 2018).

Such resources are not equally available everywhere, but they have their unique spatialities (Mayhew, R.J. and Withers, C.W.J. 2020) and a significant share of them is concentrated in relatively few places, such as distinguished universities (Meusburger, P. and Schuch, T. 2012; Heffernan, M. *et al*. 2018) and research institutes. Some of these venues prove exceptionally efficient in accumulating, combining, stabilising and circulating knowledge – in other words, becoming *centres of calculation* (Latour, B. 1987), which play a distinctive role in the construction and dissemination of scientific and other forms of knowledge (Jöns, H. 2011). Given that the production of knowledge is inseparable from power relations (Foucault, M. 1980; Meusburger, P. 2015), the leading cen-

tres of calculation tend to be closely tied from a historical perspective to the most prestigious geopolitical and economic core regions of the world (Taylor, P.J. *et al.* 2008).

That is further reinforced by the prominent role of *trust* in the social validation of knowledge (Withers, C.W.J. 2018), i.e. what scholars, as well as society in a broader sense, accept and regard as 'relevant' new scientific findings and knowledge, and which people and institutions they consider 'trustworthy' sources of knowledge. Universities renowned for the excellent science they have produced in the past enjoy a special kind of trust capital, suggesting that they will continue to produce excellent science in the present and the future. Places with a distinguished geopolitical and economic position worldwide are commonly believed to have achieved their special status, inter alia, by producing 'better' knowledge than others (Meusburger, P. 2015). Hence, for many, they become *'truth spots'* (Gieryn, T.F. 2006, 2018) or venues where more relevant knowledge is believed to be produced than elsewhere. Consequently, if one has limited capacity to monitor new scientific findings (as everyone has), one will pay more attention to new academic contributions coming from these few 'truth spots' and centres of calculation while relatively or even totally neglecting knowledge produced in other places. Moreover, as these centres of calculation tend to concentrate the most acknowledged publishing platforms and most of their editors and editorial board members, they are actively shaping what sort of studies with what kind of epistemologies are allowed to be published in these platforms and become available for a broad international readership. In other words, the centres of calculation create *uneven writing spaces* (Paasi, A. 2015), where scholars are compelled by the structural mechanisms of global knowledge production to continuously read, cite, comment on and apply knowledge originating from those centres of calculation.

The existence of such asymmetrical power geometries in knowledge production has been a long-investigated and widely discussed phenomenon in the discipline of geography. Gutiérrez, J. and López-Nieva, P. (2001) found in their analysis that authors with US affiliations wrote approximately 38 percent of all published papers in 19 geographical journals with the highest impact factor (i.e. the highest rating from the Institute of Scientific Rating, ISI) between 1991 and 1997, whereas the share of authors with affiliations in the United Kingdom was 35 percent, the total share of US and UK authors 73 percent, and only 27 percent remained for the rest of the world. Bański, J. and Ferenc, M. (2013) investigated six geography journals with the highest ISI impact factor and found that authors with UK affiliations wrote 39.9 percent of all papers, and 34.5 percent had US affiliations. Thus, the two countries contributed a total of 74.4 percent.

In one of the most impactful studies, Müller, M. (2021) revealed in his analysis of 22 top geography journals and a total of 27,359 articles that the share of articles with author affiliation from the UK declined from 36.9 percent between 1991 and 1999 to 28.3 percent between 2009 and 2017, and from 35.8 percent to 25.4 percent with US affiliations, however, the two countries still adding up 53.7 percent, with non-Anglophone countries contributing by less than one-third and only one country outside the Global North (China) exceeding the 1 percent-threshold (2.8%). Paasi, A. (2015) revealed that US authors published 45.9 percent and British authors wrote 34.1 percent of the articles in the journal *Political Geography* between 1992 and 2002, with the corresponding values changing to 38.2 percent and 38.4 percent between 2003 and 2013 and, according to Paasi, A. (2025), 25.3 percent and 37.9 percent between 2014 and 2022. That means a total of 80.0 percent, 76.6 percent and 63.2 percent for US and UK authors for the same three periods. The analyses of journal editorial board members revealed no less remarkable imbalances (Imhof, N. and Müller, M. 2020; Müller, M. 2021). In a recent study, Governa, F. and Iacovone, C. (2025) found that 43.8 percent of the articles in 6 leading international journals

in urban research between 2018 and 2023 were published by British and US scholars (UK: 22.7%; USA: 21.1%), and, for theoretical articles especially strongly shaping what sort of 'urban theories' international scholars apply, the corresponding value was 50.8 percent (UK: 29.4%; USA: 21.4%). Economic Geography as a subfield of geography is no exception, either, as Foster, J. *et al.* (2007, p. 295) reaffirmed "[t]he overwhelmingly Anglocentric character of 'international' economic geography" in their citation patterns analysis for 1982–2006, just like Hassink, R. *et al.* (2019) did in their study of Anglo-American and non-Anglo-American economic geographies.

These findings highlight massive power asymmetries in international geography, favouring the Global North over the Global South and even some parts of the Global North over others. Hence, they align with another significant body of literature suggesting that dichotomous understandings of the world as the Global North versus the Global South may be an oversimplifying binary (Solarz, M.W. 2014; Clerc, P. 2020) given that Europe is not "a homogenous powerhouse exerting dominance elsewhere in the world" (Radcliffe, S.A. 2022, p. 22.). Instead, scholars in post-communist countries in the eastern half of Europe observe complex forms of 'Western' dominance (Timár, J. 2004; Gyuris, F. 2018; 2022; Bajerski, A. 2020), and researchers in the semi-peripheral countries be they located in Eastern (Gyuris, F. *et al.* 2024), Southern or South-western Europe (Paiva, D. and Roque de Oliveira, F. 2021), have been struggling with unequal power hierarchies since the very institutionalisation of Geography as a discipline in their countries relative to what Neubert, D. (2019) calls North Atlantic academia. Several authors emphasise Anglo-American dominance in international geography, even over French, German and Italian geographies (e.g. Bajerski, A. 2011; Jöns, H. and Freytag, T. 2016; Minca, C. 2018).

These power asymmetries are not only creating unjust situations for many scholars, especially those outside the UK and the US. They also have a detrimental impact on international geography as a whole, which becomes dominated by a relatively narrow range of Anglo-American epistemologies that easily sideline or overlook alternative epistemologies and create what Ndlovu-Gatsheni, S.J. (2021) calls a 'cognitive empire'. This kind of *epistemic injustice* (Fricker, M. 2007), frequently embodied as what Jazeel, T. (2016, 2019) calls 'authoritarian theorisation', can significantly decrease mainstream international geography's capacity to recognise, understand, explain and address pressing planetary social issues of our day, especially those occurring outside the global core and being driven by different mechanisms than what are prevailing in core areas. Hence, also in line with Mignolo, W.D. (2009) arguing for 'epistemic disobedience' against the homogenising impetus of Anglo-American theories, there is a rapidly increasing body of geographical literature urging for internationalising (Schelhaas, B. *et al.* 2020), worlding (Müller, M. 2021) and decolonising geography (Esson, J. *et al.* 2017; Radcliffe, S.A. 2017, 2022; Ferretti, F. 2020), that is, providing space for theories other than those prevailing in core areas, utilising local knowledge originating from different parts of the world, and braking with colonial-modern views implying that theories developed in specific locations are less 'relevant' or 'valuable' than others. By doing so, the goal is to create a 'pluriverse', "a world where many worlds fit" (Kothari, A. *et al.* 2019, p. xxviii), i.e. a cognitive space where different epistemologies and methodologies are equally welcome to appear and interact with each other.

Such goals are not easy to achieve, however. In addition to having the abilities of "effective multilingualism" (Schelhaas, B. *et al.* 2020, p. ix) and "multi-epistemic literacy" (Radcliffe, S.A. 2022, p. 216), the scholars aiming to create a 'pluriverse' also require theories and conceptual frameworks based on empirical findings derived from the diverse realities of different locations, including those outside the global core. Studying

other places may be the most powerful engine for creating other epistemologies. Opening up the horizon of scientific research in Economic Geography, for instance, necessitates the development of theories and vocabularies based not on the actual functioning of the economy in the United States or the United Kingdom – which, due to their situatedness (cf. Haraway, D.J. 1988) are prone to failing to grasp the complex realities and their different logics elsewhere adequately – , but a meticulous empirical investigation of various sites and the development of new theories based on that, i.e. *theorising back*.

That is why the GPN literature, which incorporated from the very beginning "bringing East Asia as an equally valid empirical site and an intellectual partner inside this theory development work" (Yeung, H.W. 2025, p. 13) and has been based to a significant extent on empirical findings about the functioning of Southeast Asia's production networks, can serve as a highly relevant research object in terms of how much it is characterised by traditional UK- and US-centrism or a more diverse global geography more in line with the initiative of 'worlding' geography as a discipline. Our concrete research questions address the unequal international spaces of writing, publishing, funding and referencing, examining the entire body of Scopus-indexed GPN literature and the top authors, the most-cited publications, and their citations.

1. *Unequal spaces of writing:* Do UK and US-affiliated authors dominate the GPN literature just as they do international geography in general? Which other geographical regions (if any) have contributed significantly to the GPN literature?

2. *Unequal spaces of research funding:* Which countries provide funding for the most studies on GPN?

3. *Unequal spaces of publishing:* Which countries host the leading publishing platforms of GPN literature?

4. *Unequal spaces of referencing:* From which countries do GPN publications attract the most citations?

Methodology

Our study is based on data derived from the Scopus database of the Elsevier group, which we selected for several reasons already discussed by several scholars (cf. Bajerski, A. 2020; Kubeš, J. and Kovács, Z. 2020; Assylkhanova, A. *et al.* 2024). First, the Scopus database is the most comprehensive global bibliographic database. It has the widest coverage of international academic journals over a long period, while also incorporating an extensive data collection of other document types. We regard that as critical, given that the most well-known seminal works of the GPN literature include diverse document types, from journal articles to books, which were necessary to include in our detailed analysis. Second, the indexing scheme of the Scopus database enables a systematic and comprehensive investigation of publications by their titles, abstracts, keywords, document types and funding sources.

Third, the Scopus database provides data on author affiliations by countries and institutions. We agree with Bajerski, A. (2020) that using affiliation data for identifying a scholar's geographical attachment may be burdened with some inaccuracy in case the country of affiliation differs from the country of one's birthplace, place of studies, previous workplaces or citizenship – which makes it harder to decide whether some authors should rather be regarded as UK/US or non-UK/non-US scholars. Nevertheless, we also share Bajerski, A. (2020)'s point that the probability of such a mismatch is rather marginal for countries that do not attract foreign scholars in huge numbers, which is the case for most of the universities in the Global South and the global semi-periphery. In other words, if our study reveals a relatively high share of non-UK and non-US authors in the GPN literature, it will be justified to claim that this share is not overestimated; it may even be higher, not lower, if the study focused on different dimensions of geographical belonging.

In the first step of our analysis, we retrieved data from the Scopus database on all publications that included the term 'global produc-

tion networks' – or its singularised or capitalised version – in their title, abstract or keywords (at least one of them). A leading figure in the GPN approach, Henry Yeung reports that much of the GPN 'thinking' originated with Dicken, P. *et al.* (2001), a study based on the collaborative work of the four authors at the National University of Singapore in 1997 (Yeung, H.W. 2025). Another distinguished representative of the approach, Neil M. Coe, also claims that it emerged in the early 2000s (Coe, N.M. 2021). Therefore, we selected 2000 as the starting date of our analysis. The closing date was 2024, the last full year before we conducted our examination in April and May 2025. A total of 1,593 publications met these criteria, and we built our database from their data. While the analysis of this database formed the backbone of our study, we also scrutinised the top authors (with 10 or more publications per person), the top 15 most-cited publications and the top publishing platforms separately.

Results

A general overview of publishing patterns: The rise of a research tradition

The term 'global production networks' first appeared in the title, abstract or keywords of a publication indexed in the Scopus database in 1993, in a conference paper titled *Technological advancement and the U.S. labour force: the case of the electronics industry* by Jerry R. Sheehan at the Office of Technology Assessment in Washington, D.C. (Sheehan, J.R. 1993). The second publication, and the first journal article, was published four years later in the journal *Production and Operations Management* by Kasra Ferdows at the Georgetown University School of Business Administration, also in Washington, D.C. (Ferdows, K. 1997). Yet, the Scopus database contains only 7 relevant publications from the 1990s and another from 2000.

In line with Coe, N.M.'s (2021) and Yeung, H.W.'s (2025) recollections about the emergence of the GPN approach, a specialised scientific *conceptual framework* within the broader domain of academic studies interested in some way in global production networks as *a research object*, the trend began to shift after 2000, as the number of relevant publications increased to 5 in 2001 and 7 in 2002. The pace of growth significantly accelerated after 2003, exceeding the threshold of 10 publications per year in 2004 for the first time, followed by a shift to more than 20 publications per year in 2006. Although the numbers fluctuated between 2006 and 2012, the latter date marked the beginning of an enduring growth, reaching its peak in 2022 (136). Although the values slightly declined in 2023 and 2024 (124 in both years), this does not yet stand out from the more minor annual fluctuations typical of the previous period (*Figure 1*). Moreover, the amounts calculated for five-year periods continue to increase, from 512 publications between 2015 and 2019 to 622 between 2020 and 2024 (*Table 1*).

With a slight delay, the annual number of citations to these publications shows a clear trend of accelerating growth, crossing the ten-unit threshold in 2002, the one-hundred-unit threshold in 2005, the one-thousand-unit threshold in 2013, and the five-thousand-unit threshold in 2025. The doubling time from 1,000 to 2,000 was 5 years, while it was only 4 years from 2,000 to 4,000. A comparison of the five consecutive five-year periods between

Table 1. The number of publications about global production networks and the number of citations of these publications for the five-year periods between 2000 and 2024

Indicator	2000–2004	2005–2009	2010–2014	2015–2019	2020–2024	*2000–2024*
Number of publications	31	155	273	512	622	*1,593*
Number of citations	112	1,595	5,035	12,529	22,943	*42,214*

Source: Authors' analysis of Scopus data.

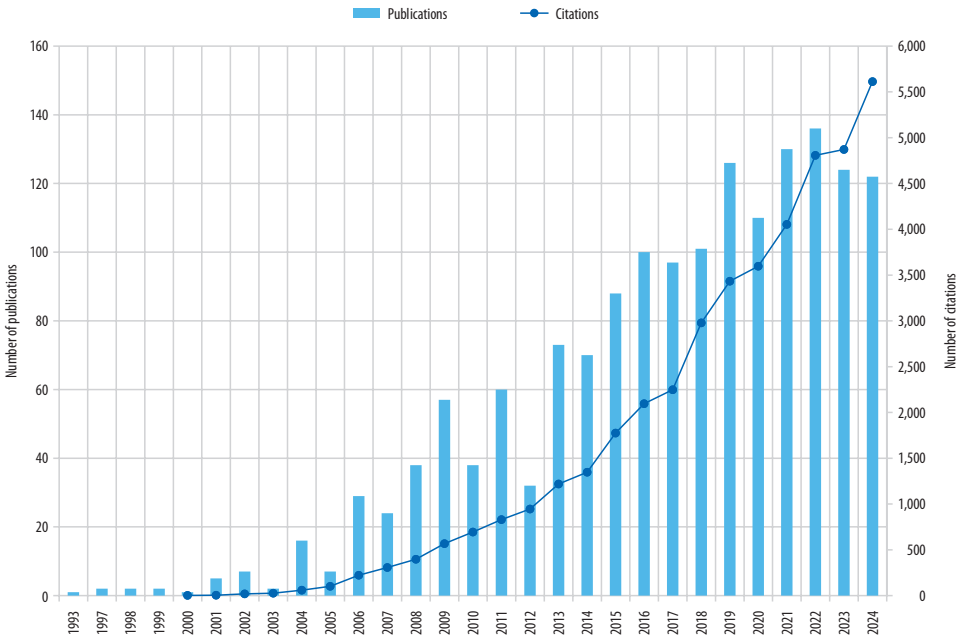


Fig. 1. The number of publications about global production networks (N = 1,600) and the number of citations of these publications (N = 42,214) between 1993 and 2024, in chronological order. *Source:* Authors' analysis of Scopus data.

2000 and 2024 reveals remarkable growth of above 14, 3.2, 2.5 and 1.8 times in chronological order. That means 54 percent of all citations of the GPN publications (22,943 out of 42,214) happened between 2020 and 2024.

As for document types, journal articles (1,128) clearly dominate the list of publications. They are followed by book chapters, with a significant lag, but still in significant quantity (220). In third place are conference papers (140), followed by book reviews (61) and books (34). Scopus also includes other document types, such as notes (13), conference reviews (8), editorials (8), errata (4), short surveys (2), and a retracted publication (1), but their total number is marginal. Although the relative share of each document type has changed to some extent throughout the five-year intervals, these changes were mainly fluctuations within a relatively narrow range rather than either massive or trend-like shifts. The values ranged from 59.4 percent to 72.5 percent for journal articles, from 12.9 percent to 16.8 percent for book chapters and from 1.5 percent to 3.2 percent for books. One can observe a trend-like decline in conference papers (from 14.2% in 2005–2009 to values between 7% and 8% after 2015) and book reviews (from 6.5% in 2000–2004 to values below 4% after 2015) (*Table 2*).

Research fields, keywords, topics

The publications can also be analysed according to the academic field of research. The Scopus database categorises 27 subject areas, and each publication is assigned to at least one of these categories. The 1,593 articles examined in our study have a total of 2,994 assignments. One-third of them (33.7%) belong to the social sciences; almost one-third of them (32.0%) to economics and business-related disciplines, namely Economics, Economet-

Table 2. The number of publications about global production networks by document type between 2000 and 2024

Publications	2000–2004		2005–2009		2010–2014		2015–2019		2020–2024		*2000–2024*	
	N	%	N	%	N	%	N	%	N	%	N	%
Article	21	67.7	92	59.4	190	69.6	349	68.2	451	72.5	*1,103*	*69.2*
Book chapter	4	12.9	26	16.8	36	13.2	72	14.1	82	13.2	*220*	*13.8*
Conference paper	3	9.7	22	14.2	28	10.3	41	8.0	45	7.2	*139*	*8.7*
Review	2	6.5	7	4.5	12	4.4	20	3.9	20	3.2	*61*	*3.8*
Book	1	3.2	3	1.9	4	1.5	15	2.9	11	1.8	*34*	*2.1*
Other	0	0.0	5	3.2	3	1.1	15	2.9	13	2.1	*36*	*2.3*
Subtotal	*31*	*100.0*	*155*	*100.0*	*273*	*100.0*	*512*	*100.0*	*622*	*100.0*	*1,593*	*100.0*

Source: Authors' analysis of Scopus data.

rics and Finance (17.3%) as well as Business, Management and Accounting (14.7%); one-eighth of them (14.7%) to earth, planetary and environmental sciences, 7.1 percent to Engineering and 12.5 percent to more than a dozen of other areas, each adding up less than 3 percent of the total amount (*Figure 2*).

The keywords of publications enabled a more precise thematic analysis and a graphic representation, a word cloud, which we produced with Microsoft Power Bi. In the first step, we cleaned the database by combining keywords that differed only in (i) the use of singular or plural, (ii) the use of British or US spelling, (iii) the use of lowercase and uppercase letters, or (iv) typos. As the quantitative investigation of this adjusted database revealed, 'global production networks' is by far the most frequently occurring keyword in the 1,593 publications examined, as it appears in 60.6 percent of the publications (966) (*Figure 3*). This high occurrence is not surprising, given that we selected publications for our analysis where 'global production networks' appeared either among the publication's keywords, in its title, or in its abstract. However, this result also highlights a significant methodological detail: we were able to identify nearly 40% of the publications included in our study by extending the search for the term 'global production networks' to the titles and abstracts of the publications, in addition to their keywords.

Moving beyond 'global production networks', the list of the 50 most frequent keywords ranges from globalisation (183) to industrial policy (27). It includes several terms closely related to, or even quasi-synonymous with, global production networks, e.g. global value chains (153), production networks (117), production systems (83), supply chains (34), and global commodity chains (29). It is a remarkable sign of the central role the analysis of stakeholders and their networks play in the functioning of the global production networks that governance approach (70), strategic cou-

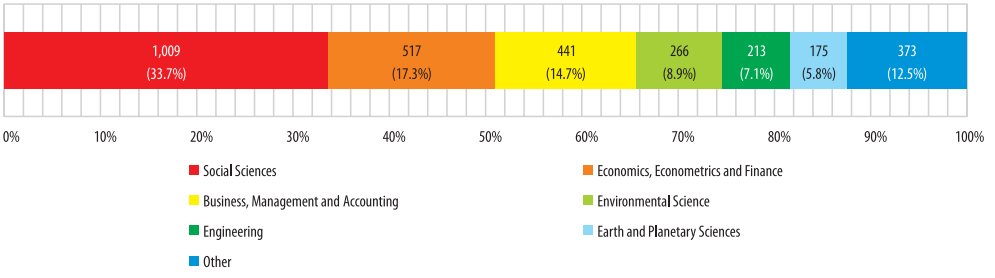


Fig. 2. The share of publications about global production networks by academic subject area (N = 2,993) between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

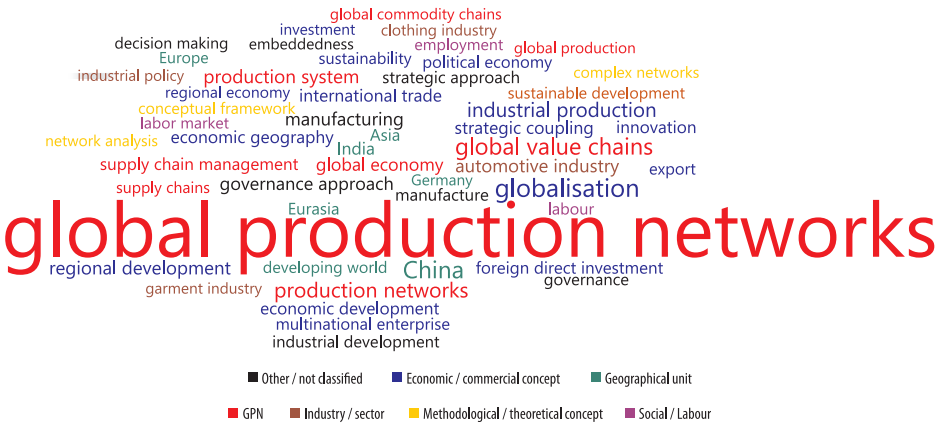


Fig. 3. The word cloud of the 50 most frequent keywords in publications about global production networks between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

pling (62), strategic approach (49), multinational enterprise (46), governance (45), decision-making (35) and network analysis (30) are frequently used keywords, and concepts related to the labour market also are: labour (41), employment (36), labour market (34).

Regarding the sectoral and geographical focus of publications, it is notable that industrial production (107), manufacturing (75), automotive industry (75), industrial development (44), clothing industry (31) and garment industry (27) are among the top 50 keywords, whereas the service sector is not. China (166) is by far the most frequently mentioned geographical region among the keywords, followed by India (60), Asia (48), Eurasia (47), the developing world (40), Europe (36) and Germany (29) – which implies a more substantial research interest in Asia and Europe than in the rest of the world, including the Americas and Africa. Meanwhile, the frequent occurrence of geographical regions and outright 'spatial' terms among the keywords (e.g. regional development: 79, economic geography: 59, foreign direct investment: 51, regional economy: 33) indicates the importance of spatial/geographical approaches in the GPN literature. In addition to all this, the simultaneous occurrence of concepts related to the (e.g. corporate) microscale and the (global, international) macroscale among the most common keywords clearly reflects the fundamental conceptual feature of the GPN approach, the intention to connect and provide a complex explanation of processes taking place at the micro-, meso- and macroscales.

Geographies of authorship: European, instead of Anglo-American, dominance

The geographical distribution of publications, based on author affiliations, reveals remarkable proportions. The United Kingdom leads the list, but its share is less than one-sixth (15.4%), and the United States contributes 10.4 percent. Thus, authors with British and US affiliations make up only one-quarter (25.8%) of the total amount. The USA even fails to take second position on the list, as it is surpassed by Germany (14.2%). The combined share of Mainland China (8.1%) and Hong Kong (1.5%) amounts to 9.6 percent. More than half of the top 20 countries (11) are located in Europe. Australia (4.6%) and Singapore (3.7%) are placed in 5th and 6th positions. Japan is also represented (1.3%),

and three countries commonly classified as part of the Global South are among the top 20 (India: 2.2%, Indonesia: 1.4%, Brazil: 1.3%) (*Figure 4, Table 3*).

Taking a broader look will reveal a firm European dominance, or Eurocentrism in classical terms, as more than half (53.0%) of the publications have authors affiliated with European countries. With a significant lag, Asia holds the second position, accounting for roughly one-quarter (23.7%) of the publications. The share of North America is only 13.5 percent, whereas that of Australia and Oceania reaches 5.3 percent. Central and South America (2.6%) and Africa (2.0%) are significantly underrepresented, particularly in relation to their share of the global population. In summary, 73 sovereign countries officially recognised by the United Nations have at least one GPN publication in Scopus, which means that 120 countries (62.2%), almost two-thirds of the world's countries, do not have any (*Table 4*), and most of the countries of Africa belong to this latter group (see *Figure 4*). Fifteen countries have only one article, and ten countries have only two. Only 42 countries have five or more articles, and only 33 have at least 10 publications.

Geographies of funding: Eurocentrism and a strong China

Another geographically relevant aspect is the spatiality of funding sources. For the 1,593 publications of the GPN literature, the Scopus database includes data about the funding source in 766 cases. Since one publication may rely on funding from more than one source, whereas many publications include no information about funding, we can only draw limited conclusions from these data, exercising great caution. Nevertheless, the numbers reveal remarkable patterns, which strongly correlate with the authors' geographical distribution (*Figure 5*).

Altogether, more than half of the funding sources (56.0%) are located in Europe, where Germany (16.6%), the United Kingdom (15.3%) and the institutions and programmes of the European Union (13.1%) have the highest contribution, leaving only 11.1 percent for the rest of the continent. Asia has less representation. Although China has the single highest share among all countries in the world (25.3%), other Asian countries have much lower shares (Singapore: 3.4%, Japan: 1.4%, each other Asian country below

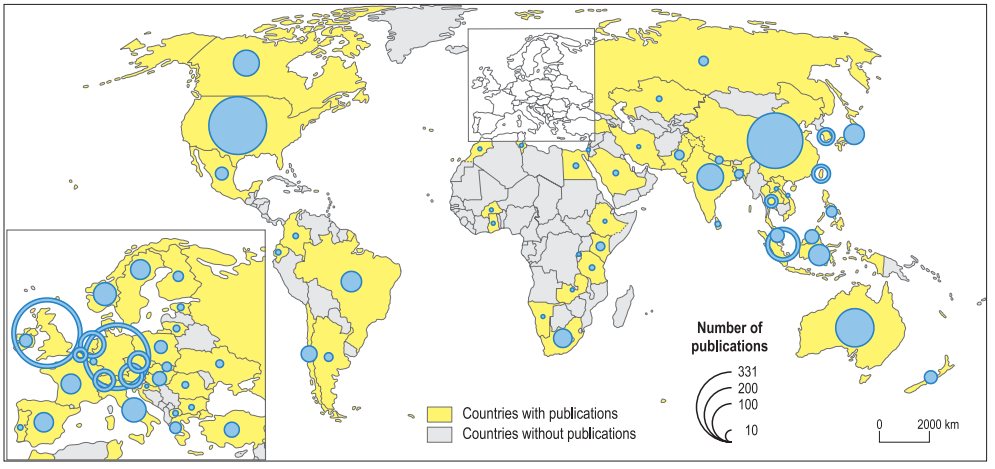


Fig. 4. The number of GPN publications by country according to author affiliations between 2000 and 2024.
Source: Authors' analysis of Scopus data.

Table 3. The top 20 countries by number of GPN publications based on author affiliations between 2000 and 2024

Country	N	%	Country	N	%
United Kingdom	331	15.4	Austria	43	2.0
Germany	305	14.2	Italy	39	1.8
United States	224	10.4	Norway	35	1.6
China*	206	9.6	Switzerland	34	1.6
Australia	98	4.6	Czechia	33	1.5
Singapore	79	3.7	Indonesia	30	1.4
Netherlands	50	2.3	Brazil	28	1.3
India	47	2.2	Japan	28	1.3
Canada	45	2.1	France	26	1.2
Denmark	44	2.1	Sweden	26	1.2

*Including Hong Kong. *Source:* Authors' analysis of Scopus data.

Table 4. The number and share of GPN publications by geographical macroregions based on author affiliations between 2000 and 2024

Macroregion	N	%
Europe	1,107	53.0
UK	*331*	*15.4*
Non-UK	*776*	*37.2*
Asia	494	23.7
North America	281	13.5
USA	*224*	*10.4*
Australia and Oceania	110	5.3
South America	54	2.6
Africa	41	2.0
Countries of the world		
represented	*73*	*37.8*
not represented	*120*	*62.2*

Source: Authors' analysis of Scopus data.

0.6%). The United States (3.5%) and North America in general (5.1%) have a low proportion. Interestingly, the share of Central and South American countries is comparable to that of North America (Brazil: 2.5%, Chile: 1.4%, Argentina: 0.1%). Only a few Asian and no African countries of the Global South appear in the list (Indonesia: 0.5%, India: 0.1%), which also includes some international institutions not assigned to a single country with marginal values (Asian Development Bank: 0.4%, World Bank Group: 0.3%, Consortium of International Agricultural Research Centers: 0.1%).

Funding sources have a diverse structure, ranging from private foundations to universities and national public institutions, but national and international (EU) government bodies are by far the most prominent. In addition to the EU, the four most important funding institutions are the National Natural Science Foundation of China (10.4%), the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG, 8.4%), the Ministry of Science and Technology of the People's Republic of China (6.0%) and the

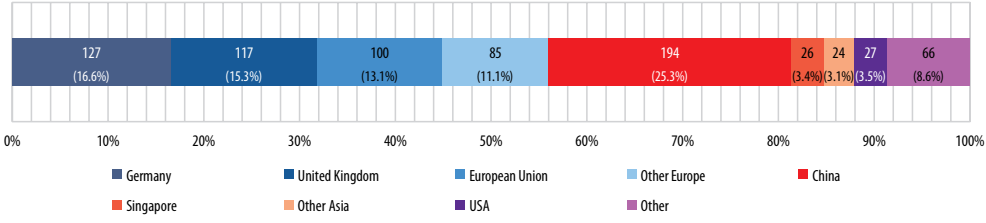


Fig. 5. The share of GPN publications by the geographical affiliation of the funding source (N = 766) between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

Economic and Social Research Council in the UK (5.1%).

Top authors: European and Asian dominance

Data from the Scopus database enables the analysis of the most prolific authors. The ten scholars with the most first-authored publications about global production networks are presented in *Table 5.* The list is heterogeneous in both geographical and disciplinary terms; however, 7 out of the 10 scholars primarily identify themselves as geographers, according to their official personal profiles on the websites of their universities or research institutes. They mainly apply the GPN approach in the style of the Manchester and Singapore schools. The other three authors represent the disciplines of Development Studies, Economics, and, in one case, Engineering/Management, which is, however, the author who leads the list – with most of his works not applying Economic Geography's GPN approach but investigating global production networks from the perspective of product technology and management.

According to their affiliation data in Scopus, 7 out of 10 authors published at least some of their relevant works while working in Europe, particularly in Germany (3), the UK (2), and, remarkably, Czechia (2). Three scholars published on GPN while affiliated with either Singapore or Hong Kong-based universities. In contrast, the US and Australia appear in just one case, and a single university in Chile represents the rest of the world. Gender relations are severely unbalanced, with eight male scholars and only two female scholars in the fourth and shared eighth places.

Table 5. The top 10 GPN authors according to first-authored publications between 2000 and 2024

Name *(Discipline)*	Affiliation(s)*	Number of first-authored publications
Schuh, Günther *(Engineering, Management)*	Fraunhofer Institute for Production Technology (IPT) (Aachen, Germany)	24
Coe, Neil M. *(Geography)*	University of Manchester (UK) National University of Singapore (Singapore)	22
Yeung, Henry W.C. *(Geography)*	National University of Singapore (Singapore)	21
Yang, Chun *(Geography)*	University of Hong Kong (China) The Chinese University of Hong Kong (China) Hong Kong Baptist University (China)	14
Athukorala, Prema-chandra *(Economics)*	Australian National University (Canberra, Australia)	10
Blažek, Jiří *(Geography)*	Charles University (Prague, Czechia)	10
Scholvin, Sören *(Geography)*	University of Hannover (Germany) Universidad Católica del Norte (Antofagasta, Chile)	10
Pavlínek, Petr *(Geography)*	University of Nebraska (Omaha, USA) Charles University (Prague, Czechia)	9
Barrientos, Stephanie *(Development Studies)*	University of Sussex (Brighton, UK) University of Manchester (UK)	9
Franz, Martin *(Geography)*	University of Marburg (Germany) University of Osnabrück (Germany)	8

*As given in Scopus-indexed GPN publications between 2000 and 2024, in chronological order. *Source:* Authors' analysis of Scopus data.

Most-cited publications: Manchester and Singapore as ultimate centres of calculation

In addition to the top authors, the most referenced publications can also be analysed using Scopus data. A closer examination of these publications is justified by the highly unequal distribution of citations for GPN publications. In fact, 284 GPN publications (17.8%) did not attract any Scopus-indexed citations until the end of 2024; 145 publications (9.1%) received only one citation, and 222 (13.9%) received only two citations. Meanwhile, less than half of the publications, 683 (42.9%), were cited at least ten times, while 198 (12.4%) were cited at least fifty times. Even among the 50 most-cited publications, with a minimum of 141 citations, a select group of highly influential works stands out (*Figure 6*). The top 15 publications, which account for only 1 percent of the entire body of literature, garnered 41 percent of all citations (17,461).

As *Table 6* indicates, the most cited publication was an early ground-breaking seminal work on the GPN approach, *Global production networks and the analysis of economic development* in the journal *Review of International Political Economy* in 2002 (1,673 citations until 2024), written by Jeffrey Henderson, Peter Dicken, Martin Hess, Neil Coe and Henry Yeung as pioneers of the new approach (Henderson, J. *et al.* 2002). In addition, the following two studies reached the imaginary podium, almost in a tie: *'Globalizing' regional development: A global production networks perspective*, an article the same authors published in the *Transactions of the Institute of British Geographers* just two years later, in 2004 (1,170 citations) (Coe, N.M. *et al.* 2004); and *Global production networks: Realizing the potential* in the 2008 volume of the *Journal of Economic Geography* by Neil Coe, Peter Dicken and Martin Hess (1,114 citations) (Coe, N.M. *et al.* 2008). Not surprisingly, most of the top-cited publications were writ-

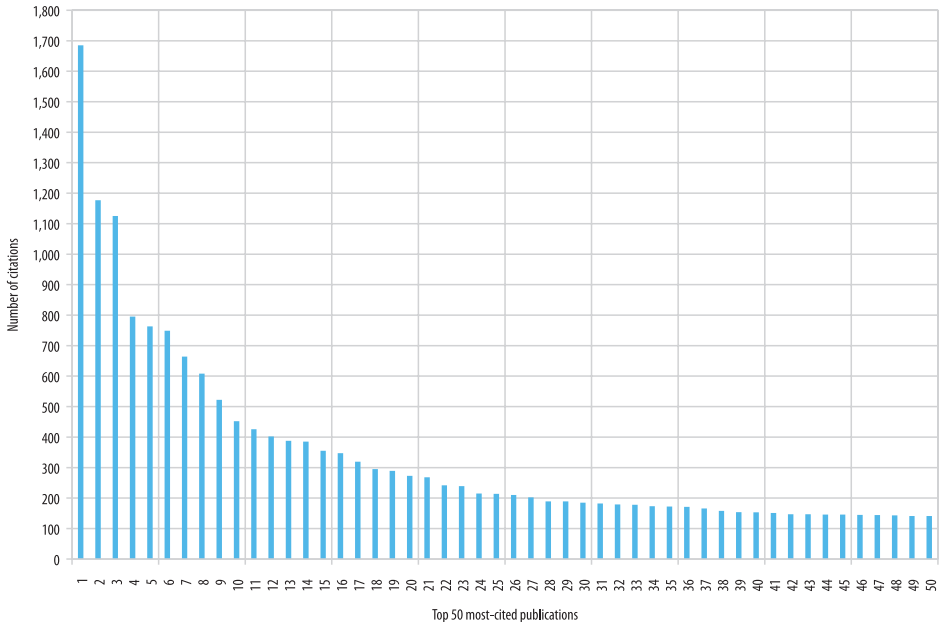


Fig. 6. The number of citations for the top 50 most-cited publications about global production networks between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

Table 6. The top 15 GPN publications by number of citations between 2000 and 2024

Rank	Publication	2000–2004	2005–2009	2010–2014	2015–2019	2020–2024	*2000–2024*
1	Global production networks and the analysis of economic development (Henderson, J. *et al.* 2002)	25	245	377	549	477	*1,673*
2	'Globalizing' regional development: A global production networks perspective (Coe, N.M. *et al.* 2004)	0	180	302	365	323	*1,170*
3	Global production networks: Realizing the potential (Coe, N.M. *et al.* 2008)	0	26	318	451	319	*1,114*
4	'Spatial' relationships? Towards a reconceptualization of embeddedness (Hess, M. 2004)	4	117	197	238	231	*787*
5	Global production networks, knowledge diffusion, and local capability formation (Ernst, D. and Kim, L. 2002)	10	107	235	226	179	*757*
6	Global Production Networks: Theorizing Economic Development in an Interconnected World (Coe, N.M. and Yeung, H.W. 2015)	0	0	0	249	488	*737*
7	Economic and social upgrading in global production networks: A new paradigm for a changing world (Barrientos, S. *et al.* 2011)	0	0	41	255	362	*658*
8	The transport geography of logistics and freight distribution (Hesse, M. and Rodrigue, J.-P. 2004)	2	76	137	211	175	*601*
9	Toward a dynamic theory of global production networks (Yeung, H.W. and Coe, N.M. 2015)	0	1	0	217	289	*507*
10	Global production networks and the extractive sector: Governing resource-based development (Bridge, G. 2008)	0	9	90	156	194	*449*
11	Political contestation in global production networks (Levy, D.L. 2008)	0	20	107	171	124	*422*
12	Regional development and the competitive dynamics of global production networks: An East Asian perspective (Yeung, H.W. 2009)	0	3	107	158	115	*383*
13	Constrained agency? Re-evaluating the geographies of labour (Coe, N.M. and Jordhus-Lier, D.C. 2011)	0	0	49	141	192	*382*
14	Global value chains: A review of the multi-disciplinary literature (Kano, L. *et al.* 2020)	0	0	0	0	380	*380*
15	Beyond strategic coupling: Reassessing the firm-region nexus in global production networks (MacKinnon, D. 2012)	0	0	32	153	166	*351*
	Total of top 15 publications	*41*	*784*	*1,992*	*3,540*	*4,014*	*10,371*
	Relative to all citations for GPN literature, %	*36.6*	*49.2*	*39.6*	*28.3*	*17.5*	*24.6*

Source: Authors' analysis of Scopus data.

ten or co-authored by leading representatives of the GPN approach.

The temporal dimension has an evident influence on the results, as studies published earlier had more time to attract citations in the time frame we examined. Nonetheless, if we scrutinise how many citations each publication received within any five-year period,

there will be no change in the leader's position, and all three publications presented before will remain among the top 5. In addition to them, the newly emerging works will be *Global Production Networks: Theorizing Economic Development in an Interconnected World*, the 2015 seminal book by Neil Coe and Henry Yeung with Oxford University Press (Coe, N.M. and Yeung, H.W. 2015), going up to the second position, and a review article from 2020, *Global value chains: A review of the multi-disciplinary literature*, published by Liena Kano, Eric Tsang and Henry Yeung in the *Journal of International Business Studies* (Kano, L. *et al.* 2020). The latter publication set the record for receiving the most citations in a single year, with 144 in 2024.

In the next step of our study, we examined the geographical affiliation of the authorship of the 15 most-cited publications. Since the number of co-authors per publication varies over a broad range, we considered each publication as one unit, which we divided equally among the co-authors. Hence, if the publication was written by five co-authors, each co-author's country of affiliation was counted as 0.2 units. For a single-authored article, the author's affiliation was counted as one unit. Finally, the subtotal for the 15 publications was 15 units.

The results reveal remarkable geographical disparities, which can be interpreted from different perspectives. On the one hand, roughly half (49.8%) of the affiliations are in Europe, followed by Asia with a significant lag (30.2%), and North America only takes the third position (20.0%). That suggests a massive European dominance. On the other hand, the combined share of the United Kingdom (34.2%) and the United States (17.8%) accounts for 52.0 percent, which is more than half of the entire sample, and Singapore contributes an additional 26.9 percent. Consequently, these three countries significantly dominate the authorship of the top 15 publications, accounting for a share of 78.1 percent. Only 15.6 percent remains for the rest of Europe (Germany: 10.0%, Norway: 3.3%, Switzerland: 2.2%), and 3.3 percent for Asian countries, excluding Singapore (South Korea: 3.3%). Africa, Central and South America, as well as Australia and Oceania, are absolutely missing from the list (*Figure 7*). In fact, two institutions, the University of Manchester (27.6%) and the National University of Singapore (26.9%), as two powerful international centres of the GPN approach, account for more than half of the top 15 affiliations (54.4%).

However, the authorship of the publications citing these top 15 publications has a significantly different geographical distribution from that of the top 15 publications themselves. The first authors of the 10,371 citing publications have a total of 10,788 geographical affiliations (in terms of country). There, the share of the United Kingdom decreases to 20.2 percent and that of the United States to 11.0 percent. Meanwhile, the rest of Europe has a share of 35.0 percent, with Germany reaching 9.1 percent and each other country falling short of 3.5 percent. The contribution of Asia increases to 20.7 percent,

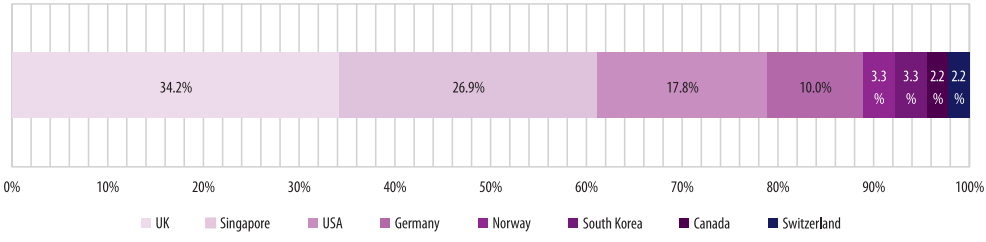


Fig. 7. The geographical affiliation of the authors of the 15 most-cited GPN publications between 2000 and 2024 (the authorship of co-authored publications is equally divided between the co-authors).
Source: Authors' analysis of Scopus data.

with only 3.7 percent coming from Singapore, and Australia and Oceania add up to another 5.0 percent. Yet, Central and South America (3.4%) and Africa (1.6%) remain massively marginalised (*Figure 8*).

Leading publishing platforms: British hegemony reloaded

To scrutinise the publishing spaces of the GPN literature, we first examined journals that had published at least two articles on the topic. This list included 138 journals from 18 countries, which hosted 914 publications, i.e. 57.4 percent of the entire GPN literature indexed in Scopus. The United Kingdom (45.7%) leads the list far ahead of everyone else and, together with the USA (13.5%), accounts for 59.2 percent of the total volume. The closest competitors are the Netherlands (8.9%), Switzerland (8.6%), Germany (8.5%) and China (including Hong Kong) (5.5%). All other countries have a rate below 2.5 percent, and the Global South has a combined share of only 2.7 percent (India: 2.3%, Brazil: 0.2%, South Africa: 0.2%) (*Figure 9*).

Switching the focus to the journals that published at least ten GPN articles between 2000 and 2024 reveals an even higher degree of geographical concentration. These 22 journals still account for 28.1 percent of the total number of publications, which translates to 447 publications. More than half, 59.3 percent, of the 447 publications were published in journals based in the UK. US journals accounted for 15.0 percent, the rest of Europe for 20.8 percent, and China for 4.9 percent (*Figure 10, Table 7*).

Results about East Central Europe: A global semi-periphery makes itself visible through knowledge brokers in the global core?

In addition to revealing the major patterns of the international GPN literature, we were also interested in the related bibliometric landscapes in East Central Europe (ECE). ECE has been defined in manifold ways during the history of geography (Jobbitt, S. and Győri, R. 2020), and the imaginations of the entire central and eastern parts of Europe are dynamically changing in time and may have different meanings from the perspective of people in different places (Nováček, A. *et al.* 2025). In this study, we defined the region as Estonia, Latvia, Lithuania, Poland, Czechia, Slovakia, Hungary and Romania. The Scopus database includes 68 publications with at least one co-author from this region, out of which 57 publications have a first author from ECE. These numbers equal 4.3 percent and 3.6 percent of the entire international GPN literature in Scopus. That means a moderate share relative to the United Kingdom, Germany and some other globally leading countries in this strand of research. The position of ECE is even weaker in terms of funding, as its share of the global funding sources, as

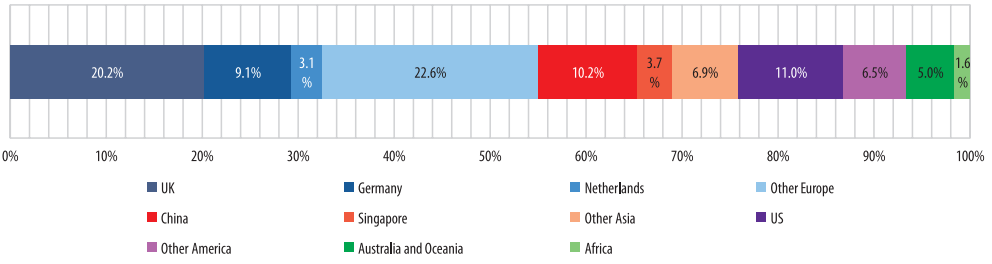


Fig. 8. The share of publications citing the 15 most-cited GPN publications by the geographical affiliation of their first authors (N = 10,788) between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

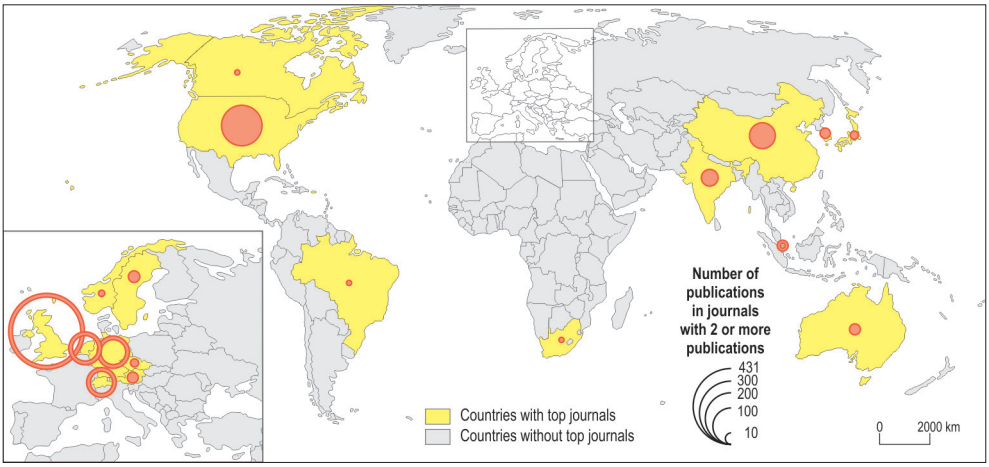


Fig. 9. Unequal publishing spaces: The number of publications in journals with at least two GPN publications by country (N = 914) between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

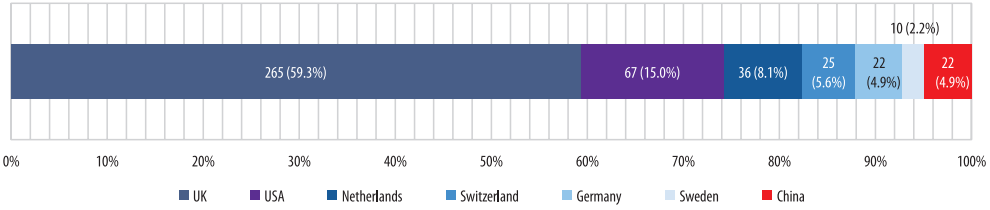


Fig. 10. The share of publications in journals with at least ten GPN publications by country (N = 447) between 2000 and 2024. *Source:* Authors' analysis of Scopus data.

indicated in the Scopus database for GPN publications, is only 2.5 percent. This is reflected in the fact that 15 publications were funded by grant agencies in Czechia and three in Hungary. However, given that ECE accounts for only 1.1 percent of the world's population, the region is overrepresented relative to most other parts of the globe.

To gain a more sophisticated understanding of the GPN literature in ECE, we focused on the 57 first-authored publications, as the other 10 articles (adding up only less than 15 percent of the broader sample) mainly included only one ECE scholar out of several co-authors, who, in most cases, was neither a first, last, nor corresponding author. Also, where the first author of a GPN publication was from ECE, most of the co-authors (in most cases, all of them) were also from ECE. As institutions in the region run several Scopus-indexed journals that publish articles in one of the local languages, the 57-unit sample includes some publications written in Czech (3; 5.3%), Hungarian (2; 3.5%) and Slovakian (1; 1.8%). Still, Scopus-indexed GPN publications from ECE were predominantly published in the English language (51; 89.5%), meaning they are accessible to an international readership with English proficiency, at least in terms of language.

Table 7. The number of GPN publications in journals with at least ten GPN publications between 2000 and 2024

Journal	Country	Number of publications
Geoforum	UK	45
Journal of Economic Geography	UK	43
Procedia CIRP	Netherlands	36
Global Networks	UK	33
Economic Geography	USA	30
Environment and Planning A	UK	30
Regional Studies	UK	29
ZWF Zeitschrift für Wirtschaftlichen Fabrikbetrieb	Germany	22
Review of International Political Economy	UK	18
Cambridge Journal of Regions, Economy and Society	UK	15
European Planning Studies	UK	15
Competition and Change	USA	14
Extractive Industries and Society	UK	13
Progress in Human Geography	UK	13
Sustainability	Switzerland	13
Dili Xuebao – Acta Geographica Sinica	China	12
Economic Geography (MDPI)	Switzerland	12
Growth and Change	USA	12
European Urban and Regional Studies	UK	11
Geography Compass	USA	11
Geografiska Annaler, Series B: Human Geography	Sweden	10
Progress in Geography	China	10

Source: Authors' analysis of Scopus data.

While the first publication, *Tendencies in the development of logistics services providers* from Gheorghe Caraiani in Bucharest, dates back to 2008 (Caraiani, G. 2008), only zero to three relevant publications appeared per year between 2009 and 2015. The take-off was the second half of the 2010s. Since 2016, the number of new publications per year has ranged between four and seven, except in 2020, when only two publications were released.

Within ECE, the geographical distribution of GPN publications is highly unequal. According to the first author's affiliation, more than half of them (52.6%) were published in Czechia, with Hungary and Poland tied for second place (15.8%) with a significant gap. Lithuania (7.0%), Romania and Slovakia (each at 3.5%), and Estonia (1.8%) are also represented in the list, while the other ECE countries are not (*Table 8*). In fact, this high degree of geographical concentration becomes even more remarkable considering that almost half of the relevant literature originates within ECE from academic institutions in Prague (49.1%), predominantly the Geography Section in Charles University, with all other towns lying below 10 percent, and only Debrecen (on second place with 8.8%), Cracow, Vilnius, Budapest and Warsaw exceeding 5 percent.

Even more than on the global scale, a small number of scholars made a decisive contribution to GPN literature in ECE. Among the 32 scholars who were the first authors of at least one GPN publication in Scopus, only 6 scholars were first authors of more than one publication, and 5 of those 6 scholars have an affiliation in Czechia: four in Prague (Jiří Blážek, Petr Pavlínek, Jan Jarolímek and Jana Vlčková), one in Ostrava (Jan Ženka). The exceptional case is Ernő Molnár from the University of Debrecen, Hungary, who stands in third place with 5 publications. Jiří Blážek and Petr Pavlínek, who also belong to the top 10 most prolific GPN authors globally (see *Table 5*), were the first authors

Table 8. The number of GPN publications from first authors in East Central Europe by country and the citations they received between 2008 and 2024

Country of first author	Number of publications	%	Citations received	%
Czechia	30	52.6	823	76.8
Prague	*28*	*49.1*	*759*	*70.8*
Pavlínek, P. and Blážek, J.	*19*	*33.3*	*729*	*68.0*
Poland	9	15.8	145	13.5
Hungary	9	15.8	65	6.1
Lithuania	4	7.0	19	1.8
Estonia	1	1.8	12	1.1
Slovakia	2	3.5	5	0.5
Romania	2	3.5	3	0.3
Total	*57*	*100.0*	*1,072*	*100.0*

Source: Authors' analysis of Scopus data.

of one-third (33.3%) of all GPN publications from ECE, and each of them had at least as many publications of that kind as the entire national scholarly collective in any ECE country but Czechia. In this sense, personal networks with global centres of academic knowledge production seem crucial, as Petr Pavlínek is also affiliated with the University of Nebraska in Omaha, US, and most of the other Czech scholars on the list are working in the same department with him in Prague.

The high degree of thematic concentration is also remarkable. Among the 15 most-cited publications, eight explicitly addressed the automotive industry, the backbone of the region's economy (Pavlínek, P. and Ženka, J. 2011; Pavlínek, P. 2016, 2017, 2018, 2022, 2023; Pavlínek, P. and Žižalová, P. 2016; Molnár, E. *et al.* 2020), five regional competitiveness and innovation more generally (Blažek, J. 2012; Ženka, J. *et al.* 2014; Blažek, J. and Csank, P. 2016; Dzwigol, H. *et al.* 2016; Grodzicki, M.J. and Geodecki, T. 2016), and only two publications focused on either theoretical-conceptual issues of GPN typology (Blažek, J. 2016) or urban economic geography from a GPN perspective (Molnár, E. *et al.* 2018). (The latter appears to have emerged as a research tradition especially in Hungary, cf. Nagy, E. *et al.* 2021.)

If the GPN publication space in ECE is uneven, the landscape of citations is even more. The 57 Scopus-indexed GPN publications with an ECE first author attracted 1,072 citations in Scopus. 76.8 percent of them were received by publications with a first author from Czechia, 70.8 percent in Prague, and 68.0 percent by the first-authored publications of Petr Pavlínek (48.6%) and Jiří Blážek (19.4%). Relative to these numbers, even the shares of Poland (13.5%) and Hungary (6.1%) seem marginal, with any other ECE country failing to achieve a share of 2 percent (see *Table 8*).

The publishing spaces for ECE authors in GPN are especially asymmetrical and they reflect a firm Anglophone dominance. The 57 publications were published in 42 academic journals and three books with international publishing houses. Only 41.4 percent of those publishing platforms are located in ECE. Instead, the United Kingdom (25.9%) and the United States (15.5%) take the lead before Czechia (12.1%), Hungary (10.3%) and Poland (8.6%). Non-Anglophone 'Western' countries (Germany, Switzerland, the Netherlands and Norway) are also represented, with a combined share of 15.5 percent, and one study was published in India. The two leading publishing platforms, *European Planning Studies* and *Journal of Economic Geography*, with four

publications each, are affiliated with the UK. Among the eight platforms where at least two publications were published, three are located in the UK (*European Planning Studies, Journal of Economic Geography, European Urban and Regional Studies*), 1–1 in Czechia (*Geografie-Sbornik CGS*), the US (*Economic Geography*), Germany (*ZFW – Advances in Economic Geography*), Estonia (*Halduskultuur*) and Hungary (*Területi Statisztika*); thus, only three of them are in the ECE region (*Table 9*). Finally, an astonishing 50.8 percent of all citations that GPN publications with a first author in ECE received were attracted by publications on British platforms, and 23.8 percent on US platforms – with another 11.0 percent of the rest also going to 'Western' platforms.

Conclusions and discussion

The last quarter-century has witnessed the rise of a new research tradition, which focuses on global production networks. It is unclear whether the number of publications is still increasing or has roughly reached its peak; however, the number of citations continues to grow dynamically and at an accelerating rate. This research field has evolved into a truly multidisciplinary domain, where social and economic sciences predominate, and earth and environmental sciences are also represented, with Geography playing a particularly critical role. Some of the literature focusing on global production networks is not directly related to the GPN approach of the Manchester and Singapore schools in the narrow sense; however, most of the literature relies on this approach. The major focus in the literature lies in the international operations and strategies of companies, along with their implications for global and regional economic development and employment. There is a marked interest in the industrial sector (especially in the automotive industry) and the spatial dimension.

The GPN literature has a peculiar geography. Whether we examine the authors of publications (either all of them or the most prolific ones), the authors of citations to top publications, the geographical background of the funding sources of publications, or the geographical case studies appearing in the keywords of publications, no British or US hegemony can be confirmed. Instead, there is European dominance – including the UK, which does not hold an outstanding share, as Germany also has a large weight

Table 9. The number of GPN publications from first authors in East Central Europe by country of the publishing platform and the citations they received between 2008 and 2024

Country of publishing platform	Number of publications	%	Citations received	%
UK	15	26.3	545	50.8
USA	9	15.8	255	23.8
Hungary	6	10.5	51	4.8
Czechia	6	10.5	47	4.4
Poland	5	8.8	32	3.0
Switzerland	3	5.3	60	5.6
Germany	3	5.3	11	1.0
Romania	3	5.3	3	0.3
Netherlands	2	3.5	43	4.0
Estonia	2	3.5	12	1.1
Lithuania	1	1.8	7	0.7
Norway	1	1.8	4	0.4
India	1	1.8	2	0.2
Total	*57*	*100.0*	*1,072*	*100.0*

Source: Authors' analysis of Scopus data.

and, in relation to their population, several other continental European countries also do. This 'primary European core' of knowledge production on GPN is complemented by a 'secondary East and Southeast Asian core' (where 'primary' and 'secondary' refer to quantitative shares).

It is not necessarily easy to compare these results directly with previous literature findings that applied to the discipline of Geography as a whole. Namely, the methodologies of those studies differ somewhat from one another (e.g. whether they work from the same bibliometric database, examine all publications in the given database or only highlighted ones, and, in the latter case, how many publications they select and along which principles). Nevertheless, it is clear that all previous studies gave similar results with all methods, and there was no significant difference between them. They all confirmed a strong combined British and US hegemony in international geography. The same does not apply to the GPN literature. That is a significant difference.

The background of this difference is twofold. First and foremost, the GPN literature prominently features East and Southeast Asia. That is definitely a big step forward towards 'internationalising', 'worlding' and 'decolonising' Geography as a discipline, making it less spatially 'inclusive' than it currently is. Second, the 'primary European core' in the academic landscape of GPN literature is not a euphemism for the UK, but it includes large parts of continental Europe. That is another, and not insignificant, step towards decreasing Anglo-American hegemony in Geography and, thus, 'internationalising' the discipline; continental European scholars certainly feel the positive difference it makes. However, we should be very clear that it does not automatically help the rest of the world and the 'worlding' of scientific research. The fact that America does not have a particularly high share of GPN literature primarily means that the weight of the USA (or North America, including Canada) is smaller in this research tradition than in the whole of academic Geography. However, Central and South America are roughly equally marginalised in the GPN literature as in international geographical publications in general, and Africa is completely so.

Another significant finding is that citation landscapes are extremely uneven in the GPN literature, just as they are in other fields of research. Here, British and US hegemony is starting to return, with Singapore emerging as a 'third pole'. Authors (co-)affiliated with Manchester and Singapore attracted more than half of all citations. These are two distinguished centres of calculation (and truth spots) for GPN.

Yet, the global landscape of publishing platforms clearly outlines the same British (and not much US) hegemony in the GPN literature as in the field of Geography. Moreover, the higher we go in the perceived hierarchy of globally leading publishing platforms, the stronger the British hegemony becomes. There is a particularly uneven global publishing landscape that exhibits great inertia, changes slowly, and is not easily altered due to structural reasons. In other words, even if a new and popular research tradition, such as GPN, emerges where a massive British and US hegemony does not apply, its leading publications will be released by the leading publishing platforms, which are still predominantly British (and North American).

The characteristics of the GPN literature in East Central Europe, a small semi-peripheral region from a global perspective, reflect similar processes. The share of the region is moderate compared to the leading global, or even continental European, centres, and researchers in ECE may obviously regard this as a 'disadvantage' or 'injustice'. Yet, relative to its population size, the representation of ECE is better than the global average, indicating that it remains somewhat privileged compared to many other regions. (Even if some people in ECE may not notice that partly because everyone's own difficulties hurt the most and because others may be so marginalised that their disadvantages remain invisible to others.) ECE's semi-peripheral situation is

also reflected by the temporal lag that the first Scopus-indexed GPN publication was released in the region in 2008 (compared to 1993 in the global domain and the emergence of the GPN approach in 2001–2002), and the research tradition gained momentum here after 2015, almost a decade later than globally. In thematic terms, the main focus of GPN literature in ECE is similar to the global patterns, with the automotive industry and the link between GPN and regional development taking the lead in the most-cited publications.

Within ECE, huge geographical inequalities apply. Czechia accounts for more than half of the GPN publications, Hungary and Poland lag far behind, each other country is below 7 percent, and many countries have no GPN publications in Scopus. Moreover, at a lower geographical scale, Prague accounts for almost half of the publications (a few traditionally important Hungarian and Polish university towns and scientific centres still appear, all with a large lag), of which two authors make up a third of all GPN publications – one of them is also affiliated with the University of Nebraska in Omaha, US, and most of his departmental colleagues in Prague also significantly contribute to ECE literature on GPN. This case highlights the significant role of key international individuals and demonstrates that a scholar's direct, personal, and formalised connection to the global centre from such a semi-peripheral region can have a profound impact, even on a broader scientific community. In line with the global trends, the number of citations received is even more concentrated in ECE than the number of publications.

The strong dependence on the global academic core is also evident in the fact that, although several Scopus-indexed journals exist in ECE, roughly two-fifths of the publications from ECE authors are published on British and US platforms, which is the same as the combined total for ECE-located platforms. The UK leads the list, significantly ahead of Czechia and Hungary. Finally, publications from ECE authors released on British and US publishing platforms receive around three-quarters of all citations, whereas publications in ECE platforms receive only one-ninth of them. That means not only top authors, but scholars in general from ECE can make themselves truly visible through publishing on a few globally leading, predominantly British and sometimes US platforms.

Our research results can also draw conclusions that go beyond the GPN literature. Our analysis, a case study based on the geographies of science approach, sheds light on three general phenomena.

1. The worlding of geography is a *process.* Once it gets started in a specific domain, it will most likely not make all other places and their scholarly achievements equally visible at the same time and at the same pace. Rather, some will 'get inside the circle' sooner (such as, in the concrete case, continental Europe, especially its western part, and certain places in East and Southeast Asia). In contrast, others (e.g. Central and South America and Africa) will still remain outside for an indefinite time. Consequently, when we are examining the worlding of geography as a process, we must not only look at how much the former hegemon's share is decreasing but also who else is 'becoming visible' and who is not (yet).

2. Even if authorship becomes more internationalised in an academic domain, the uneven geometries of the international publishing space will not automatically diminish. The geography of powerful publishing platforms may remain as unequal as before, creating a bottleneck in global science where previous hegemonies may remain largely unchanged for a very long time. This results not just from the path dependence and inertia of the physical infrastructure of existing publishing platforms, where setting up numerous new journals at high academic standards is impossible within a short timeframe. It also follows from the unequal geographies of attention, trust, and power – because authors outside the UK and the US also cite publications from these two countries' platforms more frequently. For example, many more people cite an ECE author's work if it was published in a UK or US journal.

3. More research would be needed to investigate the mechanisms of the evolution of academic attention, trust, and power in the GPN literature using case studies and cultural anthropological methods. This research should also scrutinise the individual academic careers of specific researchers and the functioning of their scholarly collectives to identify the strategies that other researchers and scientific collectives could also apply to make their results more visible.

What is the lesson from that? On the one hand, from an analytical point of view, it is worth being aware of the patterns our study revealed, understanding how the relevant mechanisms work, and recognising the underlying processes. On the other hand, if we are motivated to change the world, to make it a better, fairer place, then we should strive to 'look out' from the core of the global publication space. Let us read, use and reference more materials *published* outside the global core to engage more deeply with alternative scholarly communities, their epistemologies and findings. And let us publish more articles on those platforms – this is what this study also aims to contribute to.

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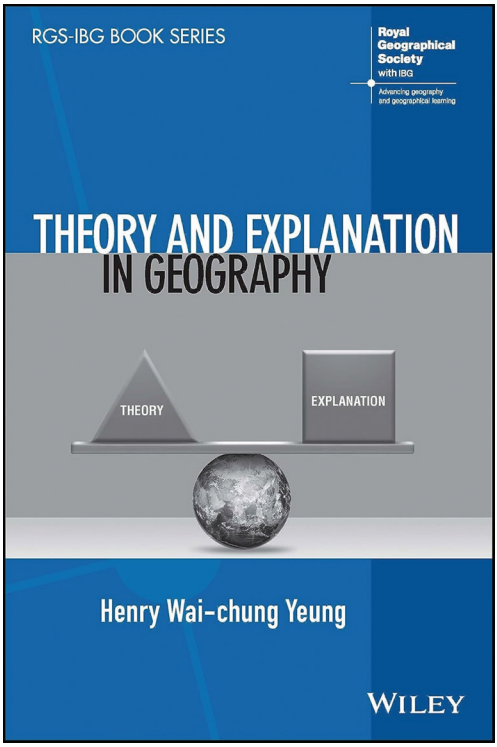
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BOOK REVIEW SECTION

Yeung, H.W.: Theory and Explanation in Geography. Hoboken, NJ, Wiley, 2024. 320 p.

In his book referred to above, presenting a plethora of theoretical approaches and concrete examples, Henry Wai-chung Yeung offers a clear and sound argument for a mid-range explanatory theory, which, in his opinion, geography needs badly. He argues for a theory development that explicitly incorporates *normative* concerns, is well grounded in *socio-spatial contexts* and, in part, through supporting researchers with their empirical studies, *useful* to the practice of positive social change. It is no coincidence that he places epistemology, which he urges that geographers should adopt for theory and explanation, within the framework of critical human geography.

Agreeing with the author's revealing reflexivity and unambiguous positionality, I find it important to make the perspective from which I deem certain topics, questions, and arguments of the book worthy of highlighting or thought-provoking clear already at the beginning of this review:



1. As I am also an advocate of critical geography (Timár, J. 2003), I should stress that, in my opinion, critical human geography still has a long way to go before it can be referred to as mainstream in Central and Eastern Europe, where a significant number of the readers of the Hungarian Geographical Bulletin are from. It is far from being in the hegemonic position where, relying on Cox's assessment a decade before, Yeung placed critical geography in general: "The hegemonic position in human geography is now occupied by something that is called 'critical human geography'" (Cox, K.R. 2014 in Yeung, H.W. 2024, p. 80).

2. In the social context where I, along with many of my fellow researchers, strive to deal with critical social sciences notwithstanding, those in power perceive approaches like Marxism, feminism or postcolonialism as ideologies, and do not regard the disciplines applying them as science; in fact, they even hinder their cultivation (Timár, J. 2019).

Nevertheless, I do not think that this book will be unable to attract considerable interest in Hungary or the neighbouring countries. For instance, an international discussion on this book was organised at the Babeş-Bolyai University in Cluj in 2024, which was also seminal to the publication of a number of papers in this issue of the Hungarian Geographical Bulletin (Benedek, J. and Ţoiu, A. 2025; Gyuris, F. 2025; Gyuris, F. *et al.* 2025; Puente-Lozano, P. 2025; Yeung, H.W. *et al.* 2025). Obviously, the author's name itself already attracts attention, since, as an outstanding scholar of economic geography and a leading figure in the field of Global Production Networks research, he was, for example, invited in 2023 by several institutions in Budapest to present his latest research findings. I admit, I also hope that this theoretical book written by an internationally renowned scholar of critical geography rejecting value-neutrality, advocating a normative and context-sensitive approach, striving for progressive changes against social injustice, exploitation, oppression, uneven development, and the like, may also serve as a source of confirmation for representatives of critical social sciences in Central and Eastern Europe. At the same time, Henry Yeung, who, after his graduation in Singapore, entered the University of Manchester in order to familiarise himself with the Western theories of economic geography, whose empirical knowledge is embedded primarily in

the realities of East Asia, and who is now a professor at the Chinese University of Hong Kong, is an author who also takes a stand against the Anglo-American hegemony of knowledge production, among other things, with this book. Thus, hopefully, he will agree that what I, too, keep in view primarily, while giving voice to some of my doubts (criticism) in the course of this brief review of the book, is the professional concerns that stem from the socio-spatial context presented above. I do so with the sincere hope that this book, together with the questions it provokes, will stimulate discussions in postgraduate programmes in the Central and Eastern European region, and that it will find its way into the curricula of an increasing number of geography courses.

In the first chapter, Yeung makes it clear that in his book he strives to develop a "causal mechanism-based approach to theory and explanation in/for Geography" and promises to examine "why an explanatory theory might be useful in certain kind of geographical enquiry" (p. 4). To this end, he presents his points of view enabling a transparent logical framework helping the reader to follow this rather major undertaking to take shape. In this endeavour he relies on the three criteria referred to earlier (i.e. normativity, context-specificity, and practical adequacy), which he sets as requirements for the theory-building he recommends. However, he views this theory development as a "synthetic project", which he also implements in three interconnected steps, especially in chapters 3, 4, and 5.

In the first step (Chapter 3), he primarily explains that a causal explanatory theory must necessarily be epistemologically realistic and practically adequate, and what constitutes the nature and usefulness of mid-range theorising (which is neither about over-deterministic generalisations nor about individual cases). In the second step (Chapter 4), relying on the epistemology of causal theory, he reconceptualises relationality, providing a critique of relational thoughts, which have become quite widespread in human geography by now. Then, in step 3 (Chapter 5), he shows that a tendency to conflate the concepts of mechanism and process can be identified in geographical literature; therefore, he develops a theory of mechanism. By so doing, he demonstrates what a mechanism-based explanatory theory might look like.

Yeung aims to create a basis for the rationale of his own theory development in Chapter 2 of his book. Perhaps it is permissible to discuss this chapter in more detail now, reversing the order presented in the book. This is justified partly by the richness of ideas of this chapter that cannot be reproduced in a book review, since the author highlights opinions, criticism, and discourses relevant to his argument from the vast literature of geography, political sciences, analytical sociology, and the philosophy of social sciences. Similar to what he does at the end of every other chapter, though now setting out 58 items on a total of 13 pages, he offers further details and sources to his readers who want to delve deeper into a given issue. Yet, he does not let them lose their bearings. In addition to a number of other useful charts and tables in the book, he rushes to their aid with a systematic overview in Table 2.1. My other reason for putting relatively greater emphasis on this part of the book is that this is the very chapter that, for me, raises the most issues likely to generate further discussions.

Yeung identifies the presence of eight strands of the geographical thought in the new era that began in the 1970s, which followed both the publication of "Explanation in Geography" (1969), the work of the young David Harvey that provided inspiration also recognizable in the title of this volume, Comtean positivism characteristic of the 1960s in general, and the quantitative revolution. Taking his pick from among them, he analyses the theories that include the word "theory" in their names. He, thus, touches on Marx's theory of capital, then goes on to examine in more detail the actor-network theory (ANT), non-representational theory (NRT), and assemblage theory within poststructuralism, post-phenomenology, and posthumanism. He then turns to the feminist theory and finally to the postcolonial theory. The presentation of the nature of these theories is at the heart of his epistemologically focused interest. And for such presentation, the analytical framework is a systematic examination of the three characteristics of the type of theory that the author considers to be followed, i.e., explanatory theory. While clearly stating that the basic purpose of this 2nd chapter is "grounding this book's synthetic approach to theory and explanation" (p. 36), he finally seems to have discarded all the theories listed there. At this point, I must admit that I find it difficult to identify any solid "grounding" in this chapter; rather, to me it suggests that if we follow Yeung's recommendation and try to "improve" geography with explanatory mid-range theories, then we can achieve this exclusively through the critical realism he has chosen.

Sometimes it is the wording that may lead me to that conclusion. For example, I interpret Yeung's frequent use of quotation marks around the word "theory" in his analyses as meaning that he questions the self-classification used in the given system of thought *in general* (not only because of the definition of the explanatory theory used by him). For instance, regarding the actor-network theory, he finally arrives at the following conclusion: "it is indeed not a theory, nor an explanation grounded in such a (causal) theory. The word 'theory' in ANT is a misnomer." (p. 50) He concludes his assessment of the non-representational theory with similar words. He thinks of NRT as an "ethos and a style of thinking about event, practice and affect", in which, agreeing with McCormack (2003 in Yeung, H.W. 2024,

p. 54), he treats theory as a "modest yet enlivening and pragmatic supplement". The conclusion here is also dismissive. "Like the actor-network theory, NRT is not a theory per se and, thus, the term 'theory' in its name is also quite a misnomer." (p. 53) Taking the geographical knowledge production practice that I have experienced in my own region into account, and being familiar with the institutional system that is still strongly influenced by positivism, I fear that, despite a seemingly shared critical geographical approach, these evaluations would only make the career chances of those young people (e.g. Berki, M. and Tolnai, G.N. 2018; Sági, M. 2022) who, for example, in Hungary have only recently started to introduce or are the first to apply ANT or emotional geographies more difficult than easier.

I am glad to agree that feminist approaches to human geography have been working successfully for the past three decades to achieve normativity and emancipatory goals. However, Yeung seems to side with those who believe that "the actually existing presence and impact of these epistemologies in Geography can still be disappointing" (p. 68). Ultimately, he finds that the explanatory theory's third characteristic defined by him, i.e. "the *practical adequacy* of analysing difference and advocating change through explanatory theories … has not been completely accomplished." (p. 68) I think criticising the effectiveness of "explaining" or the extent of "the impact on change", and seeing the possibility of progress only in the application of one type of theory, namely the explanatory one, are two completely different things. I have my serious doubts about Yeung's advice according to which a critical review of "an overemphasis on contingency and situatedness can be unfavourable to theory development in feminist geography" (p. 76) could be useful.

Chapter 6 is a case study that excellently illustrates how the author's proposed mid-level explanatory theory development presented previously can be operationalised. This chapter will certainly make those who are not familiar with Yeung's previous economic geography studies on globalisation and global production networks (GPNs) feel like reading them, and they can also familiarise themselves with their theoretical extension.

The author's intention to include this chapter is also to present why this kind of explanatory theory, for which he argues throughout the volume, is useful. Perhaps he will not be offended if I highlight a specific aspect of this usefulness here. Namely, one that I would link to the Central and Eastern European socio-political context, which I described at the beginning of this review, and which concerns the possible effects of the politics of theorising. It occurred to me that if we could make political decision-makers aware of Yeung's results regarding the explanations of the important economic processes of our times published in this chapter, they might be more likely to change their science policy ideas to our advantage.

Yeung clearly argues in this chapter as well that "the geographical theories are not contextually neutral nor devoid of value-ladenness. Rather, they almost always reflect the positionality of theorists and the historical-geographical contexts in which these theories are situated." (p. 24) Geographical specificity in his GPN theory development can be recognised in its embeddedness in East Asian reality. Moreover, in this case study too, he successfully supports the "reverse discourse", which opposes hegemonic knowledge production by "theorising back", "speaking back" to mainstream Anglo-American geography. At the same time, this chapter also confirms my view that we still need to fine-tune the extensive international discourse on combating the uneven spatial development of geographical knowledge production. We must draw attention to the fact that when, for example, criticism is voiced in East Asia, as is the case with Yeung, while "speaking back" they treat Europe as a unity, concealing, for example, the still existing disadvantage of Central and Eastern Europe in the academic institutional network (Timár, J. 2004).

Following the train of thought of "speaking back", in Chapter 7, the author argues for the strategy of "theorising back" at social science, saying that geography should not be content with just providing data to other disciplines. He does this by asking "what type of geography for what kind of social science?" (p. 252), that is, examining the possibilities of a more fruitful relationship with social sciences. He claims that the mid-range geographical theory and mechanism-based explanation proposed by him can also make a useful contribution to social sciences. However, Yeung also believes that this type of theory and explanation can make significant contributions to public engagement and policy agendas. It is another question that, in my opinion, we could open a new chapter here to discuss what kind of policy we should support. Yeung states that we cannot achieve social justice through discursive criticism and narratives alone; he also argues for the importance of activism for the victims of injustice. Towards this end and the theory-building he suggests, he encourages building relationships with like-minded social scientists. This reminds me of a friend of mine, who happens to be an economist, who is an excellent practitioner of participatory action research (PAR) in the fight against socio-environmental injustice (Málovics, Gy. *et al.* 2019). And Yeung too urges to follow this kind of PAR. The researcher mentioned, having recently discovered the commitment of the critical geographers to activism inside and outside the academic world, is rather willing to cooperate. However, judging by his work so far, I do not assume that he is also ready to develop mid-range explanatory theory. Yeung has convinced me through his book that his theory may

have a positive impact on social sciences and progressive social changes, and I can only hope that he can also be convinced that other kinds of theories and approaches can also lead us to this goal.

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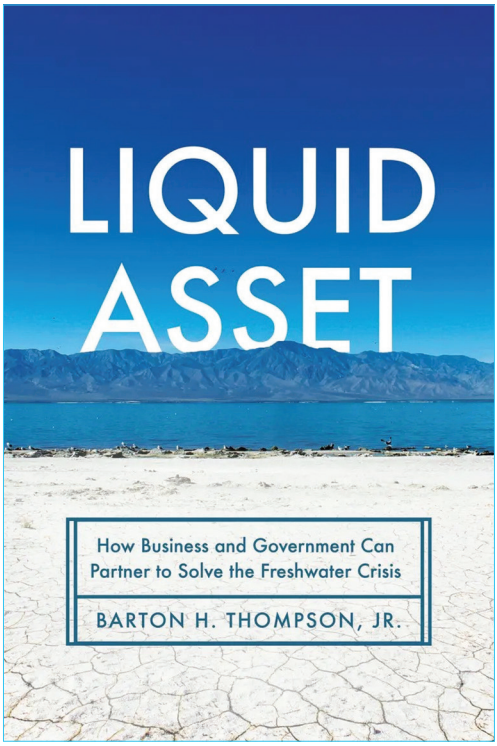
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Thompson, B.H. Jr.: Liquid Asset: How Business and Government can Partner to Solve the Freshwater Crisis. Redwood City, California, Stanford University Press, 2023. 320 p.

This book from Barton H. Thompson, a Professor of Environmental Behavioral Sciences of Stanford Doerr School of Sustainability, provides a comprehensive analysis on environmental, social and economic values of water, and emphasizes the need for sustainable and equitable water management through innovative solutions and partnerships. The book examines the following primary questions: Does the private sector promise anything unique in solving the global water crisis? What are the potential risks of growing private involvement; and how do the risks vary among the different roles that the private sector is playing? What are the challenges that private organizations face with working in a historically public sector? Finally, how can private businesses and governments better partner together to address the freshwater crisis?

The volume consists of eleven chapters organized into four main parts. Part I gives a contextual view of private sector's role in water management. Part II revisits commodification debates while offering insights to think about water as asset. Part III takes a look at the transformation of freshwater management, discussing the role of technological and financial innovation as well as human agency. Finally, Part IV discusses corporate water stewardship and explores the possibilities of a sustainable water future.



Chapter 1 provides a useful introduction to some of the global water challenges and the solutions the private sector might provide to help address them. Thompson employs the story of Cape Town in South Africa and its brush with "Day Zero" (an impending water crisis due to severe drought between 2015–2018) as a case study to stress the importance of resilience and conservation. Population growth called for action about the growing local demand as the South African Department of Water and Sanitation had reported Cape Town would run out of water by 2015 if demand continued to grow unabated and local supplies were not supplemented (Lavanchy, G.T. *et al.* 2019). Thompson gives detailed narration of water management in Cape Town from the time it enjoyed pleasant Mediterranean climates when Portuguese explorer Bartolome Dias became the first European to arrive at the Cape in 1488, and even had it named the "Cape of Storms", to the city winning national and international prizes for its water management and water conservation during "Day Zero", in particular in 2018.

Thompson later highlights some of the major water challenges facing the United States and the world like water scarcity, groundwater overdraft, degradation of freshwater ecosystems, climate change, lack of adequate access to safe drinking water, water pollution, and the growing infrastructure gap.

In Chapter 2 Thompson discusses water scarcity and other freshwater challenges that pose a growing risk to business highly reliant on water, particularly to sectors like agriculture, energy, mining, and beverages. For instance, in northern Mexico many breweries attracted local protests particularly which led to the Mexican president announcing that he would end beer production (Agren, D. 2020). In the first year of California's 2014–2016 drought, hydroelectric power fell by almost half from 18 percent of the state's total power production to only 10 percent, and in the second year, it dropped again to 6 percent (Gleick, P.H, 2016). Thompson says businesses must address and manage all of their environmental, economic, and social impacts. They have to reduce not only their water footprint but also their carbon and ecological footprints. He also describes water challenges as opportunities, not risks, and that these opportunities are the driving force for the growing involvement of the private sector in freshwater management.

Chapter 3 examines private water suppliers, the oldest private involvement in water management as

well as the largest, and this constitute about half of global and US revenue from water businesses. The case studies are context-specific in showing whether private companies are able to improve the provision of domestic water, or privatization being beneficial in some settings, while backfiring in others.

Privatization has generated fierce opposition in recent years, particularly from advocates of the human right to water and of environmental justice. Thompson looks at the history of private water companies, stressing previous studies disagreeing on the number of privatized water systems globally and in the United States. Due to poor data for many parts of the world, studies also use different definitions of privatization. History reveals that private involvement in the supply of domestic drinking water has waxed and waned over time. In the United States for instance, private companies ran 50 of the 83 water supply systems in 1850, and in Europe, the Compagnie Générale des Eaux (now Veolia) was formed in 1853 to furnish water to Lyon, France. Recently, there have been arguments across the globe by proponents for, and critics against, privatization to be considered over municipalization i.e., putting water supply in the hands of municipal governments. For privatization to win these arguments, it must bring several benefits to the table (Williamson, O.E. 1999), outweighing the advantages of full municipal control.

Chapter 8 explores the private sector's help in increasing the financing available for critically needed water infrastructure. A case study of Washington D. C. shows how a new "green" approach to stormwater was financed (Henderson, K. *et al.* 2020). A growing set of cities from Seattle to New York has therefore turned to green infrastructure to help solve their stormwater challenges (Chunhui, L. *et al*. 2019). Despite the successes of the green infrastructure, financing still falls short of the needs of critical infrastructure development in the United States by billions of dollars as 99 percent of the funding still comes from a combination of government coffers and traditional municipal bonds, and there are lots of bureaucracies in accessing these funds which many times exacerbate water crises. The municipal bond sector, while often viewed as overly cautious by investors, has engaged in significant innovation over the last two decades.

Thompson further looks at financing infrastructure through public-private partnerships (PPPs). PPPs can provide funding for water suppliers who are unable to use municipal bond due to bond limitations. The water industry has high capital needs and many water agencies operate close to their capital limits restricting how much debt they can incur. Therefore, Thompson argues that PPPs should be explored as water suppliers have become increasingly international, with China developing into a major player. In 2021, Chinese companies constituted three of the top five water companies in the world and thirteen of the top twenty. No USA company placed in the top twenty which also included companies from Brazil, India, the Philippines, and Spain, all of which have aggressively pursued privatization (Turkic, N. and Burgess, M. 2016).

Chapter 3 focuses on public policy to ensure optimum success in privatizing drinking water as policies play essential roles. In Chapter 11, Thompson reflects on four important policies that businesses and governments can improve on due to the contributions private sector is making to water management while simultaneously protecting the critical public interests in water. Firstly, the need for reforms in the public sector as the structure and practices of the public water sector both drive and impede private involvement in water management should be addressed. Secondly, regulatory policies are also essential to the effective involvement of the private sector in solving today's water challenges, and are critical to ensuring that private businesses do not negatively impact the human right to water, the environment, and other public interests. Thirdly, there is need for ethical businesses as successful water businesses will not be cowboys out for a fast buck. Instead, they should be businesses that seek to improve water management and recognize and reflect the ethical dimensions of the water field. Lastly, the need for strong public-private collaboration is crucial as the growing role of private organizations in water management tends to attract strong views about the comparative merits of the private and public sectors. Critics often see the private water sector as commodifying water to the detriment of the inherent public interests in water, as both critics and proponents pit private against public (Bakker, K. 2010).

Today's freshwater crisis, however, calls for private and public engagement, as solutions will require more effective collaboration between both sectors. As Chapter 7 describes, Singapore uses public-private partnerships to design and construct its recycling and desalination facilities, funds both basic and applied research on innovative technologies, and creates a global "hydrohub" to encourage collaboration across the technology sector. This collaboration leads to a formidable water technology sector that has both allowed Singapore to meet its water needs and create a business growth area for the island nation (Toh, M. 2021), as water is uniquely a matter of national security to Singapore (Liem, D. 2020). The story of how Singapore is addressing its dearth of natural freshwater illustrates how the public and private sector can work together to produce the type of water innovations needed to meet water challenges around the world.

Chapter 4 explores the rise of water markets, their documented benefits, and the concerns they generate. Thompson discusses two types of water markets, formal and informal. *Formal* water markets exist in only a few regions and countries such as Australia, Chile, China, South Africa, the western United States, and

limited parts of Europe (England, Italy, and Spain). *Informal* markets, in which water users trade water outside of formal governmental frameworks, exist in a larger set of countries, including parts of both India and Pakistan, but are still limited geographically. According to Thompson, several factors determine the viability of formal water markets in a region, and such markets make sense only in areas with high water demand and limited availability. There are no water markets in the Amazon, nor in the United Arab Emirates (Endo, T. *et al.* 2018), and none in most developing countries. As climate change, population and economic growth, and governmental regulation shrink the amount of water available for consumptive use in a region, water markets will become increasingly important. Thompson notes that droughts have consistently increased market activity and state efforts often lead to the creation of local groundwater markets to reduce groundwater use to sustainable levels. The spontaneous development of markets in response to shortages is perhaps the best proof of their value to water users and the economy.

In Chapter 5, the Murray-Darling Basin (Australia) case study describes how nonprofit environmental groups like Nature Conservancy, the Murray-Darling Wetlands Working Group, and Kilter Rural created the Murray-Darling Basin Balanced Water Fund in 2015 to provide water for degraded wetlands in the Murray-Darling Basin while protecting both the wetlands and the dozens of imperiled birds and other species reliant on the wetlands. By furnishing water to needy wetlands, the Balanced Water Fund helps reduce the conflict between agriculture and the environment, provides water to farmers, and makes money for its investors. The Murray-Darling Basin, as Chapter 4 explains, is home to perhaps the most robust water market in the world.

Though the Murray-Darling Basin recorded many successes, like many freshwater ecosystems of the world, it is struggling for water. Most governments have ignored environmental needs in allocating freshwater to consumptive users for decades. For instance, the western US has seen government actions causing rivers and wetlands to dry up or dramatically shrink over the past century and a half (Thompson, B.H. *et al.* 2018). Thompson also describes the rise of impact investment funds seeking to protect and improve the environment while making money for their investors.

In Chapter 6, San Joaquin's story in central California illustrates the value of thinking of water specifically as an asset and the way the western United States has long engaged in "managed aquifer recharge" (MAR), in which water managers take excess water available in wet years and store that water in underground aquifers for later use in drier years. In this part of the United States, MAR is a crucial method of ensuring sustainable water management and will become even more important as the region continues to get drier (Choy, J. *et al.* 2014). MAR has been taken a step further with AgMAR or "agricultural managed aquifer recharge. However, AgMAR can also present risks if not carefully regulated and implemented.

Thompson investigates the concerns of water users over the risks of physical water shortages. Chapter 10 discusses the risks businesses give to their business reputation and social license if others view them as using water unsustainably, and the ways businesses are addressing their own water use. As Chapter 2 explains, businesses are the largest users of water, and their engagement in water management is therefore essential to a sustainable freshwater future. Furthermore, Thompson discusses the various risks that water scarcity and pollution pose to businesses. He explains that some large corporations are adopting water stewardship programs to reduce and offset their water use and improve the quality of their wastewater, and many corporations are working with nonprofits and governments to improve water management outside their corporate walls. These corporations recognized that even their best internal programs will fail to reduce corporate risks if external governance is inadequate, and these stewardship programs, if meaningful, promise benefits to both the corporations themselves and society.

In Chapter 9, Thompson discusses the critical role that consultants, private foundations, and nonprofits can play and have played in helping California address its unsustainable use of groundwater by presenting the history of California's Sustainable Groundwater Management Act. The organization's advice and influence on the water sector provide effective solutions to change agents who then overcome political inertia and foster support for necessary new approaches, thereby changing freshwater management and contributing to solving the world's freshwater crises.

When an average person hears the phrase liquid asset, probably cash, cash in a bank deposit, or assets that can be quickly converted to cash come to their mind first. This also was my thought when I first stumbled upon the book *Liquid Asset*. However, going through a part of it I realized liquid asset in this context means a resource and this caught my attention to review the book. Relative to my previous knowledge of literature, this volume gave newer and deeper insights, dimensions, understanding, and a different perspective on water and the several opportunities water as an asset offers. The case studies, although predominantly focusing on specific regions, mobilize theoretical backgrounds, practical and applicable research results, and relevant stories which make this volume a vital resource to students, researchers, professionals, and policymakers in water-related sectors.

Owing to these novelties and pros, readers will better understand the private and government sectors, and the relations between economy, policy, environ-

ment, and society. Another merit of this volume is emphasizing that water as a liquid asset requires an interdisciplinary perspective. Collaboration between institutions, stakeholders, and effective governance are crucial for the water sector in order to curb water scarcity and ensure sustainable management.

Contrary to these merits, while the volume covers various aspects, most parts of it primarily focus on water as an asset. There are limited discussions on effects and impacts of global issues on water. In my view, the book pays less attention to water rights and environmental justice discourses than what they would deserve, and the discussions of social and cultural components is limited either. In addition, while Thompson provides many case studies, these mostly focus on the western US, especially California.

I expected more case studies from both the Global North and Global South as water challenges are global. Another key limitation, in my opinion, is the moderate attention Thompson gives to rural and indigenous communities as the numerous water challenges faced daily by these people, especially in developing countries in both the Global North and Global South, are being neglected and not properly captured in the water discourse. Notwithstanding, these limitations are an avenue for future research which will definitely improve and deepen the body of knowledge by academics, stakeholders, experts and professionals on water.

In conclusion, *Liquid Asset* is an eye-opening interdisciplinary volume. It puts business and government partnerships in a new angle, advocating for a collaborative method in fusing freshwater-related issues with environmental, societal and economic targets because of the complexities of freshwater management. It highlights that if good and effective governance and management, implementable policies, sectoral collaborations, and government-private cooperation are ensured, water can be accepted as an asset, scarcity can become a thing of the past, and sustainability can be achieved. Therefore, I recommend this book to every water user.

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