

Global Economy Prize Acceptance Speech

THE SPOKEN WORD PREVAILS

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Thank you Professor Dr. Gabriel Felbermayr.

Lord Mayor Dr. Ulf Kämpfer, Distinguished guests, Ladies and Gentlemen,

I am truly humbled and honored by this recognition. I would like to express my sincere gratitude to the Kiel Institute for bestowing this award on me. It was such a wonderful surprise, that when I first received the news from Dr. Jurgen Stehn, my honest response was “Are you sure?”.

Even after his assurances, it occurred to me that I would have a hard time explaining and justifying to my friends and colleagues how a non-economist urban researcher like me can be awarded a Global Economy Prize. But then, I imagined that the jury must have had deep insights and saw the intrinsic connections between the economic, environmental, and urban systems more than I do, and I thank you for that. I always consider an honor like this is more of a recognition of the importance of the field, namely urbanization and urban system sustainability, and I am receiving it as just one representative of the many outstanding researchers working tirelessly in it.

I very much wish I could be there in person today, visiting Kiel city for the first time, joining everyone and sharing the stage with my co-awardees- Prof. Lord Nicholas Stern, Dr. Göran Persson, and Prof. Dr. Michael Otto -what a company to join!- but instead, I am joining you from our dining room, as Canberra is in the middle of a five-week lockdown due to COVID19. Nonetheless, it doesn't change the fact that this is an incredible moment for me, not only during this very difficult time, but also across my life as a whole.

I was born in a small city in northeastern China. I wanted to be a scientist or a writer when I was a teenager, inclining a bit more towards scientist, after watching a Sci-fi TV series in the early 80s, where a female marine biologist was leading a research team trying to discover the secrets of a man from the deep of the Atlantic Ocean. I am grateful to my parents, grandparents, aunts and uncles, who always made me feel special, confident, and loved, even during the most difficult time in our family.

My father, who was a high school headmaster, always brought me back piles of books from his work trips to Beijing or Shanghai. When I was a toddler, he taught me to recite many of Chairman Mao's poems (a reflection of that special period of time in China), and a bit later, I always enjoyed the extended after-meal discussions about algebra and geometry, Russian

literature or Greek mythology. My mother always encouraged me to pursue excellence in what I did. Both of them were cautiously optimistic as I brought back various awards and prizes from school, as the prevailing wisdom then was that a girl would be less likely to excel in mathematics or science after middle school. But, they never ceased to inspire, encourage, support and appreciate. I am sure they are with me today from somewhere above, hopefully with proud smiles on their face.

My study and work has taken me to various part of the world. I have lived in Beijing, Tokyo, New Haven in Connecticut, and here in Canberra, and have travelled to every continent in the world except the Antarctic. Intellectually, every part of it has been stimulating and enjoyable, but the journey has not been an easy one. Being a woman, from a non-native English-speaking background, following unconventional career paths and crossing multiple cultural, social and language barriers, it is not hard to imagine. I am all too well aware of the additional challenges facing female researchers or those from minority backgrounds, and feel for those who are struggling on any of these fronts, and I would like to say: Hang in there, don't give up.

I feel very fortunate to have worked with wonderful colleagues from all over the world, mentors, friends, and current and former students over the years. I am always learning something new from these interactions, and somehow, during every career crisis I had, there has always been someone who trusted and uplifted me. And of course I am thankful for my forever loving and supportive family – my husband Jingzhe and my son Yang, who are here with me now. I am grateful to each and every one of you for being part of this journey.

I always find it difficult to answer when someone asks me what my discipline is. I have a complicated academic background- from structural geology and geomechanics, to civil engineering and remote sensing, then joining an ecology institute after PhD where I encountered urban ecology, and later a think tank on environmental policy and management. My current work is highly interdisciplinary. It wasn't by some grand, strategic design as it may be for some, and I certainly never knew I would end up working on cities and sustainability when I entered university.

Now this is not a recommended model for someone who wants to build an academic career. While enriching my perspectives and analytical tool box, changing field of study frequently means that first, you have to learn many new things, and second, you may need to prove yourself to different audiences again and again. As a respected scientist once said, interdisciplinarity is the art of pleasing no body. I was just following my interests as much as possible under the given circumstances. Either that or I am just easily distracted. I feel fortunate to have eventually stumbled into something that I can stay passionate about.

Cities -and everything around them- have never ceased to fascinate me. It is taken for granted, but when you really think about it, it is pretty amazing that things are all working as they are in cities, fulfilling the daily demands of tens of millions of people. Water on tap,

electricity and communication networks at our finger tips, all kinds of local and international foods, parks and nature reserves at our door steps -in Canberra at least-, waste dully collected twice a week, and the numerous theatres, exhibitions, and sports events ever-present in major cities.

Think about what's making all these things possible: Infrastructure, materials, and energy flows in and out of cities, services, industries and technologies, creativity and knowledge, policy and governance, and of course people, all these come together to form this complex system we call a city.

But this system is also quite fragile. It is highly dependent on the external world. I bet not many people are aware that our omnipotent supermarkets typically only have about 3 days of food supply stocked at any point of time. It was heartbreaking to see this year floods swiping away buildings and bridges, or filling urban tunnels within minutes trapping numerous cars and people inside. The urban system is vulnerable, and climate change means we will only be seeing more extreme weather events, such as floods, or heat waves in our cities.

COVID19 is another reminder of the vulnerability of our modern way of life. We still have a long way to go -both in terms of theory and practice- until our cities can become more sustainable and resilient, and provide high levels of health and wellbeing to all of their citizens.

By 2050, roughly 2/3 of world population will be living in cities. There will be more than 2 billion new people added to world cities, mostly in the global south. Can we imagine a city of 70 million people? Or how many smaller cities will need to be built to accommodate all this growth? How should such cities, large or small, be planned, built, and run? Cities are responsible for over 70% of global electricity consumption, and a roughly equivalent share of CO2 emissions from final energy use. Our work shows providing the same level of infrastructure as that in cities in the Global north to all residents in global south cities would entail 226gton of CO2, assuming we build these infrastructures with the same kind of technology. This will blow almost 1/3 to half of our remaining carbon budget if we are to achieve the Paris agreement. How can we make sure these cities become centers of sustainability and resilience with vibrant culture, strong productivity, ingenuity, innovation, and prosperity, instead of poverty and chaos?

Motivated by these overarching questions, my research tries to understand: What are the key elements and mechanisms that determine the functionality and environmental performance of cities, how do they change and evolve, in the past and into the future? Can we steer their trajectories? What can we do to make them more sustainable and resilient while ensuring a high level of human health and wellbeing, for people in and around them?

Building better cities is essential to better future for all.

The advantages of cities compared to other levels of government are numerous. They are closest to the people, can be pragmatic, can take swift action, and are less likely to be hijacked by ideological divide.

I would like to highlight the importance of engaging, and engaged, stakeholders in unleashing the great potential of cities. The former is putting it to city government, and the latter to the stakeholders. Urban is everyone's business, not only the city government's or the urban resident's. Everyone - from national and state government, to businesses, community and individuals, should have a say, and a responsibility, towards better urban futures.

And, of course, let's not forget researchers. We need them to provide context specific evidence, knowledge, and tools supporting decision making. The nature of research on urbanization and cities means it is often locally based. They are not always able to end up in the high-flying glossy journal publications, and local case studies are often dismissed as anecdotal.

Nonetheless, I am of the view that these in depth, contextualized case studies in individual cities are invaluable and irreplaceable. At the same time, much can be learnt from the successes and failures of others, and we already know that cities are actively learning from each other. This means we also need to look across different contexts- across social, economic, ecological, and political factors across different regions and countries.

A more complete urban knowledge will better inform our policy, and eventually help steer our course towards more sustainable actions. This can only be achieved by combining both in-depth local inquiries and comparative, cross city analysis. It is my sincere hope that our endeavor to build a greater urban knowledge globally will not be impaired too much by the lack of funding, or the geopolitical environments of our time. The urban future is our common future, and science can make it a better one.

I would like to conclude this speech with my heartfelt gratitude to the Kiel Institute, the City of Kiel, the selection jury, and to all of you here today. Thank you!