## The elephant in the sky

### On how to grapple with our academic flying in the age of climate change

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I started to become aware of the grim realities of climate change in 2005 when Merrill Singer and I started to work on a medical anthropology textbook (Singer & Baer 2007). In the chapter on 'health and the environment', we included a section on the impact of 'global warming on health', which has grown in length in subsequent editions (Singer et al. 2019). Since then, on my own, and with Merrill and others, I have been feverishly working on climate-related issues over the past 14 years (Baer & Singer 2018). Like other eco-Marxists or eco-socialists, I view the capitalist world system as the 'elephant in the room' when it comes to the ultimate driver of climate change (Baer 2012) and am convinced that the ultimate climate change mitigation strategy would be to replace capitalism with an alternative world system based upon social parity and justice, democratic processes, environmental sustainability and a safe climate - not an easy task in the face of hegemonic neo-liberalism and rising right-wing populism or incipient fascism.

Within the broader umbrella of global capitalism, there are many drivers of anthropogenic climate change, ranging from fossil fuel use, agricultural and forestry practices, manufacturing, steel and cement production, the construction, heating and cooling of buildings and residences, transport, the 'cloud' or telecommunications, etc. The list seems endless. In all of this, one driver that tends to be downplayed is the growing number of aeroplane flights around the world, even in instances where people could travel long distances by train, coach or even car with four or five passengers.

In certain social circles, air travel has become ubiquitous. The documentary series *City in the sky* (2016) asserted that 'every day, 100,000 flights criss-cross the globe with more than 1 million people in the air at any time'. The most frequent flyers are business people, politicians, diplomats, celebrities, professional athletes and sports teams, the super-rich and more affluent tourists, often travelling in private jets which they may own or charter. In essence, 'hypermobility' is a 'process driven by a relatively small part of society, increasingly comprising new societal groups with new mobility motives' (Goessling et al. 2009: 146). Air travel, both domestic and international, is much more common among people in developed countries than in developing countries, although it is growing among affluent sectors in the latter. Watson asserts:

Flying is an elite activity: only 5 per cent of people alive today have ever flown and, of those, very few are frequent flyers. It may be that just 1 per cent of humanity is responsible for 80 per cent of the world's flights. (Watson 2014: 16)

While academics are not generally ranked among the global elites, many academics in full-time positions – including anthropologists – and particularly those at elite institutions, fall into the ranks of frequent flyers. Upon recently asking a world-renowned anthropologist based at a prestigious US university whether he was a 'frequent flyer', he replied: 'Isn't everyone?' I suspect many of the subjects of his research who live on a different continent are not. Many of them have probably never flown.

I suspect that while the majority of anthropologists around the world accept the climate science and recognize that climate change has already adversely impacted upon many of the subjects of their research, and will continue to do so as humanity plunges further into the 21st century, they are not aware – or compartmentalize their awareness – that their flying may be contributing to a 4°C or more

world by 2100 if emissions from many sources are not quickly abated in the next few decades.

#### Increase in aeroplane flights

A Massachusetts Institute of Technology report about the global airline industry found that 2,000 airlines were operating around the world, serving 3,700 airports, offering 28 million scheduled flights per year and transporting two billion passengers, one-third of whom were attributed to the United States (Simms 2013: 90). Bear in mind, there is much variability among these passengers: some may be taking a once in a lifetime flight and others, such as business people, politicians, celebrities and the super-rich may fly numerous times, even daily. Projections for an increase in flights vary: Airbus anticipates a growth of 4.8 per cent in passenger flights per year between 2005 and 2025, with the global airline fleet doubling during this period; Boeing anticipates a growth of 4.5 per cent in passenger flights per year and cargo flights of 6.1 per cent per year between 2006 and 2026 (Bows 2009: 19). While there has been some decrease in the percentage of flights emanating from airlines based in developed countries, this has been offset by a boom in the number of flights among airlines such as Cathay Pacific, Emirates and Qatar, which are based in developing countries.

Flying is reportedly the fastest-growing single source of greenhouse gas emissions and is expected to continue to be so in the future (Bridger 2013: 2). The Intergovernmental Panel on Climate Change (IPCC) published a report (IPCC 1999) in which it observed that aircraft released more than 600 million tonnes of carbon dioxide (CO<sub>2</sub>) into the atmosphere per annum and were responsible for about 3.5 per cent of anthropogenic global warming. More recently, the IPCC (2007: 14) projected that even with ongoing efficiency gains, cumulative greenhouse gas emissions would rise from 489.29 million tonnes in 2002 to 1,247.02 tonnes in 2030, increasing by over 250 per cent. As aeroplanes emit nitrous oxide and other exhaust fumes, a factor of between two and three is normally applied to the CO<sub>2</sub> impact. Clark (2009: 14) reports that a flight between London and Edinburgh results in 140 kg of CO<sub>2</sub>e (carbon dioxide equivalent) per passenger, whereas a single passenger trip of the same distance in a Ford Mondeo 2.0 results in 120 kg of CO<sub>2</sub>e in emissions, a trip in a Toyota Prius with four passengers results in 16 kg CO<sub>2</sub>e per passenger, a trip on an ordinary train results in 15 kg of CO<sub>2</sub>e per passenger and a trip on a coach results in 18 kg of CO<sub>2</sub>e per passenger. A return flight from London to Hong Kong results in 3.4 tonnes of CO<sub>2</sub>e per passenger in economy class, a whopping 13.5 tonnes of CO<sub>2</sub>e per passenger in first class and 4.6 tonnes of CO<sub>2</sub>e per passenger on average (Berners-Lee 2010: 135). Flying first class or business class is more environmentally damaging than flying economy, because the former requires more space and more amenities, such as higher quality food and beverages, than is the case in the latter (Bridger 2013: 18).

The airlines and airline organizations maintain that greenhouse gas emissions from flights will progressively decline, even to the point that eventually 'zero emissions flight' will be achieved. Most airlines now have an environmental policy of some sort. The aviation industry has made no commitment to reduce its greenhouse gas emissions until after 2020, promising reductions based upon future technological improvements, such as lighter

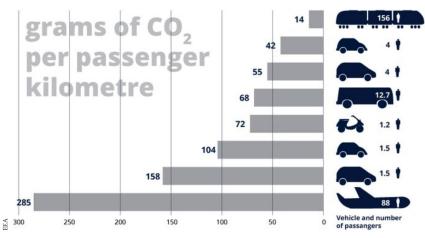


Fig. 1. Grams of CO<sub>2</sub> per passenger kilometre. (European Environment Agency Report TERM 2014. https://www.eeaeuropae.uc/ media/infographics/co2emissions-from-passengertransport/view).

airframes and more energy-efficient forms of propulsion, including solar flight, electric flight and reliance on alternative fuels, particularly biofuels and even hydrogen (Bridger 2013: 21-22). Fuel efficiency does increase with the size of the aeroplane, meaning that flights in small aircraft, particularly private jets, are particularly energy-intensive and intensive in terms of greenhouse gas emissions. (Bridger 2013: 13).

In terms of making aircraft design more energy efficient, the aircraft industry tends to focus on reducing aircraft weight, reducing aerodynamic drag and improving engine performance. While there have been significant improvements in energy efficiency over the past few decades, these have been offset by the number of aeroplane flights in this period. While the newer aircraft are more energy efficient, a shift in the global fleet will at best – given the expense of new aeroplanes – require enormous embedded energy, resulting in additional greenhouse gas emissions. This constitutes one more example of the 'rebound effect' or Jevons paradox, in which energy efficiency is associated with increased economic growth, consumption, pollution and greenhouse gas emissions.

#### Air travel on the part of anthropologists

Attendance at professional conferences has become an integral component of academic life. Many academics are involved in air travel, a practice that seems to be spreading. Flying to attend conferences and research meetings and to conduct research started quite early among prominent British anthropologists, such as Bronislaw Malinowski, who 'used *Imperial Airways* to attend international conferences in Cape Town and Johannesburg, and to visit southern African fieldworkers in the summer of 1934' (Pirie 2012: 100). Undoubtedly, in her later years, Margaret Mead gave anthropology an international profile as a frequent flyer. Academic air travel often increases with seniority, affiliation with elite universities and funding from granting agencies. Parker and Weik observe:

Setting aside package tourism to sunny beaches, the elite nomads from the traveling classes then include academics from the elite institutions of the Global North. They have generally travel budgets and something to say at the conferences and symposia that keep chain hotels profitable. This is a mobility that appears to be chosen and is socially valued, not one that is forced and humiliating. It is a mobility that speaks with passport stamps, conversations about different airports and the name-dropping about where you are now and where you are going. (Parker & Weik 2013: 168)

They further argue that while reflexivity is often a valued trait among academics, they often fail to reflect upon the environmental impact of their hypermobility. As one who has presented at and attended his share of academic conferences, I have witnessed first-hand the reality that these are events where an academic can present new ideas and insights on his or her own research and even on

the state of the world. However, most speakers are only provided with short periods of time in which to speak, perhaps 15-20 minutes - or maybe 30 minutes with a little luck. Probably the main benefit of the conference is the opportunity to network, prompting some attendees not to attend many of the presentations. A survey of staff at Aalborg University in Denmark revealed that on average they took two international trips a year, with 22 per cent of their trips being to Scandinavian countries, 56 per cent to other European countries and 22 per cent to countries outside of Europe (Lassen 2006: 304-305). In a survey of over 300 Australian academics, Andrew Glover (2016) and his research team at the Royal Melbourne Institute of Technology found that the average Australian academic takes 1.7 overseas return flights and three domestic return flights per annum for academic purposes.

Anthropologists, at least some of whom are frequent flyers, may therefore be engaging in an activity that the subjects of their ethnographic research have never - or at least seldom - engaged in. Furthermore, given that most anthropologists hail from the Global North and often engage in studies of indigenous, peasant and poor urbanites in the Global South, much of their work focuses on people who already have and will continue to be the most adversely impacted by climate change - populations in places such as low-lying islands in the South Pacific, the delta of Bangladesh, mountainous regions in the Andes and Himalayas and semi-arid and arid regions of sub-Saharan Africa and the Middle East (Baer & Singer 2018: 87-140). Even within countries of the Global North, it is the indigenous people who are the most adversely impacted by climate change, such as the Inuit and Inupiat in the Arctic, Native Americans in the US Southwest and Aboriginal Australians residing in remote communities. There is a danger that much anthropological research in remote areas today constitutes a form of quasi-voyeurism, harking back to a time when the discipline constituted the 'child of imperialism' (Gough 1968).

Given that the American Anthropological Association (AAA) is by far the largest anthropological association in the world and thus possibly constitutes a 'reflection of American economic and military power', Kenyan anthropologist Mwenda Ntarangwi (2010: 102) suggests that 'we conduct studies of this enormous community and see how it operates'. Based upon his observations at the 2002 AAA meeting in New Orleans, he concluded that 'it seemed as if the audience were being treated to a well-choreographed academic show in many of the presentations' (Ntarangwi 2010: 109). Aside from the social interactions and rituals enacted at these conferences, a critical anthropological analysis of such events would entail a consideration of their ecological impacts. Zygmunt Bauman (1998) maintains that the increasing number of professional trips made by various types of experts contributes to the growing division between cultural elites and marginalized groups.

In 2017, the Australian Anthropological Society held a joint conference with the Association of Social Anthropologists of the UK and Commonwealth and the Association of Social Anthropologists of Aotearoa/New Zealand at the University of Adelaide on 11-15 December 2017. The vast majority of the 500 or so delegates to the conference flew to Adelaide, not only from various parts of Australia and New Zealand, but also various parts of Europe, Brazil and Asia. Of the keynote speakers, one was from the United States, one from the UK, one from New Zealand and one from Australia. In a panel on infrastructure, I did a presentation to an audience of 20-25 people entitled 'Grappling with flying as a contributor to climate change: Strategies for critical scholars seeking to contribute to an ecological revolution'. It was well received, even though virtually all the attendees at the panel had

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Pirie, G. 2012. Cultures and caricatures of British imperial aviation: Passengers, pilots, publicity. Manchester: Manchester University Press. flown to the conference from a variety of different places, including the UK. I tried to communicate to my colleagues that I was not trying to lay a 'guilt trip' on them, stressing that academic flying has increasingly become a component of corporate or neo-liberal universities in their efforts to position themselves in an international higher education market.

#### Alternative forms of flying and flying far less

The growing concern about climate change has prompted discussion about the possible revival of airships powered by a hydrogen-helium mixture or helium, thus circumventing the dangers of disasters such as the explosion of the *Hindenburg*. If perfected, airships could constitute a form of slow travel, given that they travel at speeds of 150-200 km per hour. Given that passenger transport by ship is not environmentally sustainable, transoceanic travel could make considerable use of wind power. However, within the parameters of existing global capitalism where 'time is money', such slow forms of long-distance travel are not feasible, although they might be within the context of an eco-socialist world system – an envisioning project which I perceive to be part of developing a critical anthropology of the future (Baer 2018).

In the meantime, while awaiting a global socio-ecological revolution which remains long in the offing – during which time, much damage will be done, particularly to many of the peoples many of us as anthropologists have studied and on whose behalf, for better or worse, we have sometimes intervened – what can we do, on both an individual and collective level, to be part of the still-burgeoning climate justice movement, which proclaims 'not climate change, system change' (as opposed to the climate movement per se, which is largely focused on ecological modernization, exemplified by the adoption of renewable energy sources, energy efficiency, electric vehicles and other techno-fixes – not that some of these are not needed)?

On an individual level, we can join a small movement urging academics to fly less, such as the one mounted by Parke Wilde (2015), an academic at Tufts University, who has posted a petition urging universities and professional associations to reduce the amount they fly. Kevin Anderson (2014), a world-renowned climate scientist at the Tyndall Centre in the UK, gave up flying some time ago and took a 20-day return trip from the UK to a conference in Shanghai, during which he managed to get much work done. Some universities have begun to take into consideration the greenhouse gas emissions generated by university travel and have even taken modest steps – generally tokenistic ones – towards mitigating it. While my own university proclaims that it is making a 'bold commitment to reducing air travel' in the form of 'high quality teleconferencing facilities' (University of Melbourne 2017: 14), I continue to witness numerous colleagues flying off hither and thither to conferences, research meetings, consultantships, short-term overseas teaching stints and research projects, as well as other academics visiting the campus, sometimes for a few days to deliver a keynote address, or maybe a few weeks to deliver an intensive subiect, or whatever.

The commitment of my own university and other Australian universities does not even touch on the matter of overseas students who have become a major source of income now that the Australian government has cut back on funding for public universities. While theoretically, overseas students contribute to the cosmopolitanism of any university, whether in a developed or a developing country, sociologist Raewyn Connell (2019: 191) asserts that under the present circumstances, the 'international market in feepaying students sucks money out of developing countries

to pay universities in richer ones' – one more example of unequal economic exchange under the parameters of the capitalist world system. Given the looming climate crisis, it is imperative that anthropologists, along with other academics, closely reflect upon how they pursue their careers and research. While an anthropologist, as part of his or her PhD thesis fieldwork, may opt to spend a long-term period overseas, he or she should seriously consider not making numerous additional short-term trips overseas, sometimes annually, to the original research site, but confine future research to sites much closer to home. Conversely, if one's PhD thesis was conducted close to home, one might have the option to conduct long-term research in a faraway place perhaps later in one's career.

In terms of conferences, instead of attending international conferences in faraway places, anthropologists should confine their conference attendance to their own countries, or in the case of Europe, to countries that can be easily reached by rail. European anthropologists are much better positioned to travel to conferences in their region because of a dense, international rail network. Perhaps in time, North American countries, including the United States, Mexico and the Central American countries as well as Australia, could develop a comparable network. In the case of the United States, rather than focusing on flying to the American Anthropological Association conference, which for many functions as an international conference, there should be a strengthening of regional associations, such as the Northeast Anthropological Society or the Southern Anthropological Society, which hold conferences that can be reached by land. Anthropologists in large urban areas - where a multiplicity of anthropologists are situated in universities, government agencies, non-government organizations and other institutions - could organize local conferences, with the option of teleconferencing for distinguished overseas speakers.

However, anthropologists will have to overcome their elitist predilection to avoid such conferences because they are deemed parochial – which does not necessarily have to be the case, particularly if eminent anthropologists from afar are accessible via Skype. Personally, over the years, I have found that such conferences can be very intellectually stimulating and personable and often touch upon burning issues of the day.

Anthropological postgraduate students often attend conferences, particularly the American Anthropological Association conference, to interview for a position. Such interviews rarely result in being hired, given their rapidity and superficiality. Both anthropology departments and anthropological associations need to grapple with strategies by which the interviewing process results in numerous flights, excluding teleconferencing, an approach which already has become more common.

As part of creating a more even playing field in the world, anthropological associations and universities in developed countries can financially support the training of anthropologists from developing countries, either in the core or the periphery, to function as 'native anthropologists' in their own countries. Anthropologists can both study and provide support to movements to reduce flying and halt the expansion of airports, such as Aviation Justice (US), Plane Stupid (UK) and the Global Anti-Aerotropolis Movement. In Australia, Mark Carter, a graphic designer, has created 'The elephant in the sky' Facebook group, Climate Action Moreland has called for a moratorium on the expansion of Melbourne Airport and Residents Against Western Sydney Airport has formed a campaign to stop the planned second major airport in Sydney. In February 2019, I attended a Skype conversation at the Melbourne Sustainable Living Festival with Maya Rosen, a young Swedish woman who founded 'We Stay on the Ground' and launched a new iniSimms, A. 2013. Cancel the apocalypse: The new path to prosperity. London: Little, Brown.

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Wilde, P. 2015. Calling upon universities and professional associations to greatly reduce flying. http://aireform.com/ petition-fly-less/ tiative 'Flight-free 2020' in which people pledge to stay on the ground for a year. Greta Thunberg, a 16-year-old climate justice activist from Sweden who gave up flying about four years ago, told delegates at the 2019 World Economic Forum conference in Davos: "I think it's very weird that people come here in private jets to discuss climate change" and say that "Oh we care about this very much" but they obviously don't' (quoted in Kottosova & Macintosh 2019).

#### Conclusion

Pinpointing various social categories who engage in frequent flying and – knowingly or unknowingly – a form of environmentally irresponsible behaviour is perhaps a touchy topic among relatively progressive people, such as academics, environmentalists and climate activists, who at some level are aware that flying results in greenhouse gas emissions and that it is a growing and significant driver of anthropogenic climate change. Raising the topic among colleagues, friends and acquaintances can be an even touchier matter and one which I myself have not resolved how to address. Aeroplane flights have become an integral part of doing business, socializing and holidaying in the modern world and have become a hegemonic aspect of everyday life, one that all too often is ignored, or acknowledged but put into the 'too hard basket'.

While individuals may opt not to fly or to reduce their flying – an option that some people have pursued – work and career demands have made aeromobility central to the logic of the capitalist world system and an increasingly corporatized university sector. As a species, we need to move beyond aeroplanes as much as possible, but such an

effort will have to be part and parcel of creating an alternative world system, one that preserves both human life and biodiversity. Perhaps in time, solar-powered aeroplanes — beyond the small experimental ones that presently exist — will become a reality, but such a scenario looms on a distant horizon at best. The global socio-economic, ecological and climate crises that are the by-products of global capitalism require that we re-examine much of what we do in terms of work and leisure, what we eat and consume in general, what sort of dwellings we reside in and how we move about our planet. A simpler way for the affluent world would entail a disposal or minimizing of the use of aeroplanes and motor vehicles.

Anthropologists need to contribute in various ways by participating in a growing, but still disparate, climate justice movement, which is particularly strong in the Global South. This differs from the narrower climate movement prevalent in the Global North, which tends to focus on technological solutions, particularly renewable energy sources as the major means for decarbonization, while downplaying social justice issues. Just as anthropology went through an effort to reinvent itself in the late 1960s and early 1970s, it needs to once again reinvent itself by moving beyond the political impasses of particularism and post-modernism and shift towards becoming a more ethical, socially just, localized, post-colonial and ecologically sustainable endeavour, while maintaining a global vision that recognizes that all human beings, particularly those situated in the Global South whom many of us continue to study, face the threat of catastrophic climate change if emissions fail to be drastically reduced over the next few decades. •

# comment

#### THE ELEPHANT IN THE SKY

Must we fly? Hans Baer has done anthropology a great service by posing this question. Its premise will strike many of us as novel and unwelcome. We view ourselves as environmentally benign: we neither mine gold nor dump toxins. But we do take to the sky in machines that lather carbon dioxide at high altitudes, where it will trap heat immediately. This is bad. To a degree which is completely out of proportion with our numbers, anthropology bears responsibility for carbon emissions, climate change and threats to conditions for life on planet Earth.

So I agree with Baer's answer to his own question: we need not fly nearly as much as we do. Think about academic conferences. For the last decade or so, I've been taking the train to gatherings in North America – and largely staying home. The shift was not particularly difficult: as a tenured professor in the northeast US, I enjoy ideal conditions for lower-carbon scholarship. Yet, the institutional arrangements of anthropology in the US have not helped. The American Anthropological Association (AAA) has considered and rejected proposals to hold its annual meetings electronically or less frequently. 'Virtual' conferences are becoming popular in other bodies, including in the Society for Cultural Anthropology. But too few anthropologists seem willing to compromise and pollute less. Further questions, then, arise: why do we fly, encourage each other to fly, and, indeed, normalize the combustion of jet fuel in just about every way possible?

Let me approach answers from an unexpected direction. Obviously, we value face-to-face conversation. I will dispense with that explanation and those deriving from convenience, conformism or self-interest. Sure, the two-hour aeroplane flight from New York to Chicago will take 20 hours by train. And a sleeper will cost you more than flying. But our real problem is not lack of time or money. It is a failure of imagination. At root, our discipline lacks – or deprives itself of – the intellectual resources with which to respond appropriately to climate change.

Some of the problems are old. Ethnographers tend to focus on one locality at a time. We have come a long way from the Trobriand Islands, but most of us still privilege face-to-face, small-group relations. We do so even against countervailing evidence. One knows, for instance, that sea-level rise now imperils Marshall Islanders, but analysis compartmentalizes the refugees from the consumers of oil, gas and coal. Anthropological models do not follow CO<sub>2</sub> molecules as they waft up, trap heat and energize hurricanes.

Or, lately, some models follow those molecules all too well. The 'ontological turn'

emphasizes an agentive, 'lively' quality of materials. They *do* things. If so, then oil, gas and coal bear some responsibility for their effects in the world. And the class of travelling humans bears less than full responsibility. At precisely the moment when our profession could examine itself, we are decentring the human subject altogether.

Meanwhile, another set of scholars are revelling in moral relativism. In a recent special issue of the JRAI, Mette High and Jesse Smith interrogate what they see as 'simplistic judgements' in ethnographies of hydrocarbons as well as renewables. 'Almost without exception', they write, 'anthropological research on energy either presumes or advocates an energy transition' (2019: 13,11). Let's say such authors - including myself - are guilty as charged. We join a long tradition of anthropologists who have sought to understand practices in order to abolish them. Consider, as just one example, the work of my colleague Alex Hinton in analyzing genocide. An expert on Cambodia, he holds the UNESCO Chair on Genocide Prevention. Prevention! There is judgement hidden in plain sight. And we have long judged: anthropologists turned against colonialism and now against settler colonialism too. Inexplicably, we stop there. Our profession suffers from a kind of reverse nostalgia: we condemn political arrangements