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Aeromobilities and Climate Change: Disruptions, Risks and Responses
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Introduction

One issue that has recently become increasingly prominent in international civil aviation has been its impacts on the environment, and its potential accelerating effects on climate change. In this paper, my objective is not to reiterate again these harmful ramifications, or how modern society's flying habits may have been wasteful and unsustainable (see Chapman, 2007; Graham and Guyer, 1999; Goetz and Graham, 2004; Ryley, 2014). Rather, it is to think through some of the measures that have been taken to mitigate the environmental impact of aviation, as well as the implications of these efforts – whether they tend to ameliorate the threats of climate change, or in fact worsen it.

For the purpose of this discussion, a particular emphasis will be placed on the contentions surrounding the application of the European Union Emissions Trading System, or EU ETS, to international flights. No doubt, the European-led initiative has up till now been the most concrete step in tackling the growth of greenhouse gases emitted by aircraft on a 'part-global' basis; yet, it is also not without controversies, as many have questioned its effectiveness and legitimacy (see Staniland, 2008). This paper wants to exactly delve into the (geo)politics of this mitigation plan, and interrogate its consequences on at least two levels. The first pertains to the unpopularity of the EU ETS as a scheme that disrupts aeromobilities in the present, not least by way of increasing costs to operators. The second turns to examine how such a stance may have invited retaliatory responses, which tend to retard and encumber 'real' solutions to climate change. It is

argued that a more coordinated effort that takes into account the diverse needs of different nations and governments is needed in order to move aviation forward sustainably.

Mobilities and Climate Change

Along with a growing interest in environmental debates in the past two decades across the social sciences, mobilities have recently likewise become closely intertwined with climate change. This does not just apply emissions due to air transport, but of travel of all kinds. As Greene and Wegener (1997: 177) write, “[n]ear the end of the 20th century, ... the belief in the desirability of perpetual growth in mobility and transport has started to fade ... It has become obvious that in the face of finite fossil fuel resources and the need to reduce greenhouse gas emissions the use of petrol cannot grow forever.” Whereas transport had in the past been seen as an enabler of development, it is now widely seen as a source of pollution, and a target of more sustainable ways of doing business.

Such a motif arguably still finds resonance in current academic literatures. With many of these now allied to the ‘new’ mobilities paradigm (Sheller and Urry, 2006), scholars are increasingly concerned with not just the untenable trajectories of transport growth, but also the cultural bases undergirding the pursuit of mobility. On movements within cities, David Banister (2011), for one, recently calls for a re-thinking of urban lifestyles that are overly-reliant on long-distance travel and low density car use. In response to this situation of profligacy, he, along with others, are promoting the need to adopt ‘soft’ measures to counter these trends, including efforts to change the automobility habits of people through demand management, and the prioritization

of greener forms of transport such as walking and cycling (see, for instance, Geels, 2012; Schwanen et al., 2012; Urry, 2008; 2011).

Tourism mobilities have likewise come under scrutiny. Høyer and Aall (2005), partly trace the history of increased car use to the development of the concept of leisure. They note how early advertisements had presented cars as a means to escape the polluted city, thereby marketing travel as an almost necessary health measure. Similar constructions can be found too in the aviation industry. Airlines, particularly low cost carriers, have a distinct interest in opening up new routes and promoting new destinations as they do so (Goetz and Graham, 2004). This makes them at least partly responsible for the creation of an addiction to holiday flying among a new middle-class, who did not use to enjoy such affordances. Exacerbating matters, gimmicks such as frequent flier programmes have only created more incentives for a lifestyle of regular air travel among mobile elites, for whom aeromobility and associated consumption only breed more mobility (Gössling and Nilsson, 2010).

Naturally, these developments have generated concern, though not just within academia, but also in policymaking circles. For the last decade or so, there have been rising pressures on authorities to look into the sustainability of aviation as a high-carbon activity increasingly made available to the masses and in markets with large populations. Worsened by peak-oil, and high fuel prices, there has been a growing search for technological solutions to the problem among aircraft manufacturers, ranging from more fuel efficient planes to explorations on alternative bio-fuels. In terms of air traffic management, there has also been a streamlining of procedures to make airways more efficient. Yet, all this does not usually come with a willingness to relinquish

growth, or to address the underlying cultures of high mobility. As IATA Director, Tony Tyler intimates recently in the centennial celebrations of aviation, while the industry subscribes to an “all-in-it-together’ ethos”, it is not about to sacrifice “the benefits of connectivity” and “aviation [as] a force for good” in the name of environmental protection (IATA, 2013).

The closest the industry gets to actually curtailing demand and changing the way business is done is perhaps by way of its rationalization of climate change. One key move to render the problem more operable has been to make it visible through projections of climatic futures, the identification of its causes and the subjection of the issue to the power of quantification (Rose, 1991). If the Kyoto Protocol is any guide, climate change is not a discursively open-ended debate, but is often articulated in a language of science, and in the terms of maximal temperature rises, emission targets and quotas. This has necessitated schemes that seek to ‘price in’ this putative damage through various limits, offsets, taxes and cap-and-trade schemes. But even these curbs are not innocent but harbour their own politics, for not every party has the legitimacy to engage in this science, neither to propose solutions. There is in other words a particular motive and way of disciplining how climate change ought to be subdued.

Gerard Ó Tuathail and Timothy Luke (1994) gave an early sense of this, when they coined the term “green governmentality” to critique attempts by the US government in the 1990s to re-frame global affairs in ecological terms. Postulating this as less an altruistic gesture than a means to extend US hegemony after the Cold War, the ‘environmental’ agenda was, for them, designed to return the world to a state of being “caught ‘in the balance’”, albeit, this time, not “between capitalism and socialism but between ‘ecological sustainability’ and ‘environmental

destruction'." (Ó Tuathail and Luke, 1994: 392) In more recent years, measures such as carbon-trading have become developed by the industrial North as that solution that can deliver a carbon-neutral future. Under these schemes, the Global South can be made to 'pay' for its development, and to, in effect, "sell its future capacities to produce carbon (as in to industrialise) to the North which not only continues to produce emissions, but, in real terms, increases them. The North [in turn] uses these carbon offsets not for business-as-usual; but for business *better-than-usual*" (Doyle and Chaturvedi 2010: 524; original emphasis).

The EU ETS

In the aviation context, a similar pattern of dominance and less-than-ingenuous treatment of climate change can be detected, though not so much involving the US this time, but the European Union (EU). To understand how this power dynamic came about, one must return to the decisions made in 1997. Under the Kyoto Protocol, emissions from international aviation were exempt from legal limits, and were left unregulated. This gap left a door open for the EU to prove itself as a worthy champion of the 'green' agenda. In particular, since 2005 and with the launch of the EU Emissions Trading System (EU ETS, and formerly EU Emissions Trading Scheme), questions about aviation's sustainability began to gain sudden traction, expanding the cause of climate change to a new industry and collection of gases. As the EU Director-General for Climate Change, Jos Delbeke, pressed, "CO₂ emissions from the aviation sector have been growing rapidly [are are projected to rise] by up to 700% by 2050... It is more than logical that there is a contribution from the aviation sector" (European Commission, 2012).

The year 2008 marked a further strengthening of this discourse, when the EU submitted this statement to the Ad Hoc Working Group on the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC) (GreenAir, 2008):

Importantly, the way the rapidly growing emissions from international aviation... are addressed in the UNFCCC and its Kyoto Protocol is not effective. The growth of emissions in [aviation], if it remains unchecked, might significantly reduce the effect of the overall efforts in all sectors to prevent dangerous climate change.

Arguing that emissions from aviation represented one of the fastest growing sources of greenhouse gases, the EU insisted that current frameworks to conserve the planet's climate required revamping. Not least, it would need to include international aviation as part of its regulations, in order to stop "dangerous climate change" from festering through this glaring loophole.

Accordingly, the EU issued a directive in November 2008, which proposed the immediate inclusion of aviation within its cap-and-trade scheme, starting, in 2012, with a 3 percent reduction in total emissions against 2004-2006 levels for all flights using EU airports, based on their entire routes (EUR-LEX, 2009: 3-4). This idea swiftly drew opposition from non-EU states, notably the United States, and developing countries such as China, India, and Russia, which protested the subjection of their carriers and airspaces to a foreign carbon market, or more bluntly put, tax regime. In the time between 2008 and 2012, two joint declarations were signed, not coincidentally in New Delhi (in 2011) and Moscow (in 2012) to consolidate like-minded states within the anti-ETS camp. In addition, Russia had threatened to re-instate costly trans-Siberian over-flight charges on EU carriers heading to Asia; China, on the other hand, reportedly withheld rights from Germany's Lufthansa to fly an A380 from Frankfurt to Shanghai over the disagreement (see Lin, 2013).

Disrupting Others' Aeromobilities?

At the heart of this row was non-European states' unhappiness with the EU's unilateral inclusion of *their* aviation interests into an ETS widely suspected of being used as a revenue-raising ploy in Brussels. Insofar as the ETS, in its original form, had a further tendency of pricing airlines with older fleets, or without deep pockets to compete, out of European markets, another complaint was that the scheme did not fully take into account the different social and economic needs of developing states, some of which depended on aeromobility to or through the EU to lubricate their burgeoning economies, or on European travellers who fuel their tourism industry.

Given the Europeans' unflappability on the issue, these countries soon viewed the EU's insistence on applying the ETS to international air travel – or more specifically to their airlines – as an affront and a form of unnecessary disruption to transcontinental movements. As early as 2009, just months after the EU directive was passed, countries from regions like South America, the Middle East and Asia, had been rallying to get the International Civil Aviation Organization or ICAO, the UN body for air transport, to intervene. As it was reported in the 187th ICAO Council Session in June-July 2009:

Noting that the European Union (EU) would impose its emissions trading scheme (ETS) on all aircraft overflying European airspace as of 2012, [the Representative of Saudi Arabia] requested that the [ICAO] Secretariat develop a safe, secure and economical route for aircraft from Asia and the Arab world over-flying European airspace so that they would be able to avoid the EU's unilateral action (ICAO, 2009)

Using a language almost suggestive of an Asian and Arabian world 'caught in the balance', what the Saudi representative's views encapsulated was a concern many fellow developing countries shared. ICAO was, in this context, urgently appealed to, to find a means to shield, or, better,

exempt them from the provisions that the EU was trying to extend extraterritorially to their domains.

Other countries were wary of another kind of risk to their aeromobilities, aside from the sheer fact of increased costs. Specifically, by calculating emissions caps based on the entire route of a flight, even if most of it took place outside of Europe, the ETS was poised to penalize players like Singapore and Malaysia, being in a part of Asia far from Europe, more than, say, Middle Eastern hubs, resulting in a distortion of competition and of current air networks. As an aviation consultant explains,

The Asia Pacific region, because parts of Asia Pacific region are very far from Europe. Essentially you end up paying a lot more. Right? So a flight say from [Southeast Asia] to, uh, London pays a lot more under the EU ETS scheme, than say a flight from Dubai... So that has the potential of actually distorting the competition. (Personal Communications, Interview, 30 November 2012)

In short, some hubs could potentially lose out to rivals like Dubai because of a measure like the EU ETS. The latter's relative proximity to Europe meant that its carriers would have fewer allowances to purchase, and thus could compete better in carrying transfer traffic. The ETS could in turn upset the balance of aerial trade wholly outside of Europe, even without its politicians realizing it.

Disrupting Aeromobilities' Future

If the EU ETS posed a form of disruption to mobilities of other states, the 38th ICAO Assembly, as a forum to end this deadlock, would plant the seeds of future disruption, as developing states used this occasion to strike down the environmental scheme. Taking place last

September in the Canadian city of Montréal, the Assembly (A38 for short) was of significance because it was widely expected to forge a lasting climate change pact for air transport. Hoping to rally states together on the issue, “Uniting Aviation” was chosen as the theme of that summit (ICAO, 2013a) – a slogan that would later prove to be rather ironic when negotiations fell apart (Shalom, 2013).

A key part of A38 involved discussions over a document known as Working Paper 34 (WP34). Beginning with the consensual goal of stabilizing greenhouse gases concentrations in the atmosphere, so that global temperatures would not rise by more than 2 degrees Celsius, WP34 sought for a middle ground in the application of the EU ETS, stating, in Paragraph 17, that it would “recogniz[e] that States or groups of States may choose... to implement MBMs (market based measures) that apply to flights to or from third countries which depart or arrive at its airports... for the portion of those flights within the airspace of that State or group of States” (ICAO, 2013b: A-7). Applied to the EU ETS, a permissible permutation would be to enrol foreign airlines into the European programme, on the basis that cap-and-trade measures were only applied within EU airspace.

Viewing it as a compromise, the Lithuanian representative, speaking on behalf of EU and ECAC (European Civil Aviation Conference) states, swiftly endorsed WP34, calling it a comprehensive measure to ensure a reduction of aviation's climate impact. While acknowledging that the text was not perfect, the EU seemed to have re-calibrated its stand so as to reach a grand bargain on the matter, as long as it remains the bellwether and leader of environmental protection in aviation. But this compromise was roundly rejected by the former opposing states, which

would have no part in paying any environmental taxes to the EU. Pressing, without specifying, for a global solution to the problem, China was one of the leading countries that disputed WP34's comprehensiveness. The Asian state urged for a greater balance in determining the cause of climate change in aviation, arguing that the resolution needed to achieve a balance among all issues, instead of highlighting only emissions cap-and-trade schemes as a means. What was more, China did not see the problem of excessive emissions as a question of demand per se, but one of the refusal of developed states to share funds and relevant technology with the developing world. As such, if the threat of aviation to global climate were to be addressed, it had to start, however unlikely, with the freer circulation of proprietary technological expertise, and greater assistance packages from wealthier countries.

Weighing in on the precept of Common But Differentiated Responsibility (CBDR), which China also supported, Brazil insisted that countries like it should not be roped into the game of mobility austerity. It went on to draw lessons from the UNFCCC, to point to historical gaps that were yet to be addressed at ICAO. In particular, it argued that responsibility for climate change cannot be imposed on both developed and developing states equally. Noting that there have been variations in emissions over time, it demanded an opt-out for developing states from the EU's mobility austerity. While climate change may have an impact that *now* seems to be shared, but, viewed over a longer time period, it is in large part attributable to emissions of an older industrializing world that has already escaped culpability.

As another example, India hinted of inevitable retaliatory action against the EU should its ETS go through, citing terrible consequences for the industry. Specially, India argued that the

scheme would spark “retaliatory schemes” creating “a patchwork [of regulations and limits] that has a terrible consequence for industry”. In short, the South Asian state was adamant that the scheme could not be revived without impunity, appealing to the support of “large numbers of states” to pressure the authors of paragraph 17 to back off. Failing which, the populous nation seemed poised to implement its own retaliatory schemes in the name of environmental protection against the EU, akin to what China and Russia had done prior to A38.

By the end of the second meeting, the biggest opponents of WP34 would table what was known as Amendment 425 (ICAO, 2013c). In place of Paragraph 17, they wanted a new clause added, namely that states wanting to implement unilateral MBMs, such as the EU ETS, must engage in constructive negotiations with other States to reach an agreement first. In effect, this was an indirect way of saying that the scheme would never take off, since no agreement would be forthcoming. Amendment 425 was thereafter put to a majority vote at the behest of Russia, India, and Saudi Arabia, among others, by way of a roll call vote (Shalom, 2013). In order to save the ETS, EU member states tried to prevent that vote from happening, by proposing a couple of complicated blocking votes: first, to suspend the meeting, and therefore avoiding the vote altogether; and, second, to delete all guidance on MBMs in WP34, in effect overriding Amendment 425, and giving the EU free rein. These were both, however, unsuccessful, with a large proportion of states banding together to oppose the Europeans' last-ditch proposals. In the end, Paragraph 17 had to be changed by majority preference, to include the aforementioned multilateral agreement clause.

An (In)conclusion

A dubious resolution ultimately came out of A38, which was to defer all market based measures until a globally agreed one was ready in 2020 (ICAO, 2013d). In view of such a distant time horizon, the opponents of the EU ETS have also effectively averted financial or route disruptions that the scheme was to have brought, leaving their traffic growths and profit margins intact for now. However, immediate pain was only traded for possibly more destructive interruptions in time to come, in the form of extreme weather events, increasing energy, food and other supplies costs, and choppier skies leading to greater fuel burn (Amos, 2013). By engaging in an unsolvable squabble with the EU, and skirting the issue at hand, developing states are at least partly responsible for planting the seeds of future (involuntary) disruptions to aeromobilities by taking no action on climate change. This impels serious thought as to how aeromobilities for emerging markets ought to be accommodated in time to come, amid projections of rapid traffic growths in precisely those places. Yet, not forgetting the equally valid arguments for these countries' development after the North's footsteps, current frameworks predicated on Western interests, hegemony and at times even revenue-raising intentions are clearly unsustainable too, requiring solutions that are more egalitarian and amenable to societies at varying stages of becoming mobile.

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