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Academic travel from above and below: Institutions, ideas, and interests shaping contemporary practices

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ABSTRACT

Following climate goals, such as the UN Sustainable Development Goals (SDGs), a growing number of European universities are changing their policies to reduce travel-related emissions. These policies must be implemented coherently, ensuring that the environmental, social, and economic dimensions of sustainability be accounted for. Yet, despite universities' commitments to reducing travel-related carbon emissions, mobility accounts for over a third of university emissions. The distribution of emissions is also unequal among researchers and more sustainable modes of mobility remain expensive. These factors complicate the shift towards flying less for academic mobility. In this article, we aim to explore the complexities related to policy change and flying less. In applying the 3Is (institutions, ideas, and interests) framework to two cases—the University of Bergen, Norway, and Utrecht University, the Netherlands—we show that policy change is not just about implementing policy mechanisms, just as flying less is not merely 'a matter of choice'. Rather, it is a political process involving conflicting institutions, ideas, and interests that shape academic travel policies and practices. Drawing on participant observation, analysis of travel policies, and interviews with faculty and staff, we find that there are systemic constraints prevent academics from finding alternatives to flying. These circumstances highlight the need to address persistent institutional pressures that shape academic travel practices, to promote alternative forms of sustainable travel, to open a conversation around what constitutes practicing good science in today's world, and, finally, fairly provide researchers with resources to enable alternative travel futures.

1. Introduction

Climatic changes have resulted in a growing body of sustainability transformation and transition literature [1,2]. Even as there are fissures between various traditions (e.g., ecological modernization vs. degrowth), there is a shared belief in the need for emissions to be cut rapidly to prevent catastrophic levels of global warming. Although the COVID-19 pandemic led to a momentary slowdown in the growth of global emissions [3], the removal of lockdowns has led to a swift rebound particularly on the aviation sector [4]. As of now, aviation accounts for 2.5 % of human-induced CO2 emissions [5], with a global warming potential three times higher due to associated emissions such as nitrous oxides, aerosols and water vapor [6]. This makes the per capita CO2 emissions of aviation the highest of all modes of mobility [7]. With the per capita emissions of the richest 1 % of the population exceeding the global per capita level for the Paris Agreement 1.5C goal by more than 30 times [8], the issue of aviation is also an issue of justice.

Stemming from concerns pertaining to the emission intensity of flying, a growing number of European universities have adopted carbon neutrality as part of their energy policies. More specifically, universities such as the University of Bergen (UiB) [9] and Utrecht University (UU) [10], are evaluating their academic travel policies, adding sustainability as a criterion, and promoting alternatives to flying. Academic travel within the scope of our research is defined as all work-related travel for research purposes by academic staff, including for fieldwork and conferences, excluding private travel. As part of the universities' efforts and associated climate goals, such as the SDGs, these policies need to be implemented coherently, which means the environmental, social, and economic dimensions of sustainable development need to become equally integrated into travel policies and practices [11,12]. The

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promotion of alternatives to flying, such as hybrid options and ground travel fit well in the aims to make travel policies more sustainable, as these alternatives are more beneficial towards the social and environmental dimensions of sustainability, when compared to air travel [13–16].

In the university sector, the shift towards flying less with respect to all sustainable development dimensions is a highly ambitious task. Air travel can account for one-third or more of total university emissions [17]. Moreover, air travel emissions are unequally distributed in academia, with as few as 10 % of employees accounting for 60 % of mobility-based emissions [18], with senior academics such as professors flying the most [19]. In contrast, those that stay on the ground are often those with limited funds, physical disabilities or caring commitments [20–22], such as women or scientists in low-income countries [23]. This brings up debates of equity and "who gets to fly" [24].

Studies have found that environmental awareness does not directly translate to a low-carbon lifestyle, and researchers involved in "green" disciplines such as sustainability may even fly more than other academics [19,25]. This knowledge-action gap can be stated to result from a complex interplay of constraints preventing scholars from having the ability to benefit from alternatives to flying. Some can be traced back to institutional resource constraints, as grant agencies and departments often demand that scholars use the most economical means of travel, which often consists of the high-emission practice of flying – or when the expectation of travel is "built in" to positions of tenure or funding instruments [26,27]. Some of these constraints are related to alternative ideas about how to approach issues around carbon neutrality in academia. Others are related to conflicts of interest, and about who is responsible, and how. These may relate to personal considerations—i.e. flying to places is part of the fun of doing research [28], or short term versus long term considerations, such as flying being considered crucial in gaining experience and networks [29] and future contributions [17]. In addition, as flight emissions are generated outside the workplace (Scope 3 emissions) [30], they are difficult to track, and the associated conflict of responsibility often leads to their incomplete calculation or to them being ignored completely [31].

Finding alignment between carbon neutrality targets and travel policies and practices is therefore not a technical matter of (scientific) know-how; just as flying less is not simply 'a matter of choice'. In reality, policy change for flying less is a political endeavor in which often conflicting institutions, ideas, and interests (the 3Is) shape policy outputs and outcomes [32], potentially preventing the successful integration of lower-carbon forms of travel into academic travel policies and practices. Academics, especially climate researchers, therefore, find themselves in a challenging situation. The perception often is that academic hiring, tenure, and promotion systematically disadvantages those who travel less, affecting their opportunities for publishing and networking, while damaging their reputation or (personal) ethics if they do fly [1,33]. Sheller [1], for example, in discussing the role of academic hypermobility admits "many of the talks that I wrote for various conferences and events, or travel to conduct research, did directly result in a publication." However, the scientific consensus on whether travel correlates with professional success (e.g., in terms of H-index) remains contested [19]. The 3Is provide a suitable framework for studying these politics of flying less, because it takes into account broader societal and power dynamics which influence policy coherence processes [32,34,35], such as the institutional environment in which the travel policies need to be implemented, different interests and resources related to choices for travel, and how travel is framed in science and academia.

Although numerous studies have been conducted on the problematics of academic aviation, such as in the context of Fennoscandia [36,37] and Central Europe [18,38], as well as North America [19] and Oceania [39,40], none of them so far have utilized the 3Is framework. The purpose of this study is to explore the politics of flying less in academia in relation to fostering alternative travel practices in the Northern European academic context. We ask: *How can universities work toward coherently enabling alternatives to flying with respect to all dimensions of sustainable development?* To do so, we explore two case studies: the Centre for Climate and Energy Transformation (CET) at UiB in Norway, and the Copernicus Institute of Sustainable Development at UU in The Netherlands. These cases are suitable, because as climate departments they are among the most frequent flyers within academia [41], while at the same time sustainability is their main research objective. While we do not claim the case studies to be a representative sample, they share a glimpse of the struggles and complexities of navigating emission targets in Western and Northern Europe. We see our effort here as one in which we bring conversations pertaining to policy coherence into discussions revolving around emission reduction in the university, using travel policy as a case study for this undertaking.

2. Unpacking policy change for flying less in academia

2.1. Theoretical framework

Policies do not operate in a vacuum. Instead of merely being a policy output, policy change is a political process that is influenced by a range of resources, ideas, and interests in a specific policy context and with a range of outcomes [34,35]. As pointed out by Sheller [1,p. 2], in the context of travel it would not be an exaggeration to claim that academics have weaved aero mobility "into the *ethos* of science"; creating a *flyout culture* [42] associated with elite status [43], salary, and career progression,[1] to an extent that a fear of not flying now exists [33]. In addition, alternatives to physical presence are often lacking, such as in relation to fieldwork [25,26]. Policy changes that successfully result in flying less therefore demand a comprehensive interrogation of the complex interplay between variables that hold it up.

To unpack these complexities of policy change in the context of academic travel we applied the 3Is framework, developed by Shawoo and colleagues [32]. The 3Is framework is not new [34], but the framework by Shawoo et al. [32] has been developed to study policy coherence and therefore suits our specific research aims. This framework is presented in Table 1. We analyzed how the interlinked concepts of institutions, ideas, and interests influence the travel policy process and outputs, and the extent to which and how academics can benefit from these in practice.

Institutions can be understood as "procedures, routines, and conventions embedded in the organizational structure of the policy or the economy" [44,p. 2405]. They relate to the context in which policy change is negotiated, including the structures and systems in which policies and policy-making are embedded [45]. Institutions can be

Table 1
The 3Is.

Variable	Components
Institutions	Structures and systems
	Laws, rules, regulations, and standards
	Communication, coordination, consultation, and participation mechanisms
Ideas	Definitions, paradigms, framings, and discourses
	Societal norms and values
Interests	Preferences and agendas held by actors
	Broader power dynamics and distribution of power
	Distribution of resources, income, and wealth

Note. 3Is framework and the ways in which each variable influences policy outputs [32].

[1] See Wynes et al. [19] for a discussion of nuances pertaining career progression. For example, while flying and academic seniority are linked, it could be a result of senior researchers having access to more funding rather than a cause of them securing this position.

formal laws, rules, regulations, and standards, such as procedures and guidelines around academic travel, or communication, coordination, consultation and participation mechanisms such as monitoring [46]. Institutions have the power to either enable or constrain how certain ideas and interests can be executed [44], but in turn, can also be influenced by new ideas and interests which enter the policy-making arena.

Ideas can be understood as "claims about descriptions of the world, causal relationships, or the normative legitimacy of certain actions" [47, p. 48]. In the travel policy context, ideas include certain definitions, paradigms, framings, and discourses about how travel within academia should be organized, as well as dealing with broader societal norms and values. Ideas shape how problems about cutting emissions are framed, as well as what solutions are suitable for solving these problems [34,44,48]. Sheller [1,p. 11] claims that "academic aeromobility is no coincidence, but a form of travel that is held up by a complex set of *incentives*, which over time have become entrenched as *values* and *norms*, to a point where they have come to form a part of academic *culture* and *identity*". As such, ideas have the power to influence institutions and initiate change, but they are also likely to resonate with the most dominant interests which may prohibit change [32,49].

Finally, *Interests* are "material considerations of specific domestic sectors that react rapidly to changing circumstances, that is, according to short-term benefits and costs induced by the global economy and (new) global governance initiatives" [46,p. 68]. They are concerned with certain preferences and agendas held by actors, as well as power dynamics and distribution of power which may impose conflicts. Power distributions often need to be changed to create policies that are aligned [35], which favors the argument of opening up decision making processes. However, many interests may also lead to fewer aligned outcomes [48]. Interests have the power to shape ideas and institutions but are often also guided by societal beliefs and institutional constraints.

2.2. Case studies

2.2.1. CET (UiB)

CET, the Centre for Climate and Energy, was inaugurated in 2017 to inspire a "rapid societal change to meet the climate challenge." The first *CET Low-carbon Travel Policy* was developed soon after, in 2018, with the stated goal of reducing "emissions from CET activities, in accordance with UiB's climate targets[2]" and an ambition to "inspire similar efforts outside CET" [50,p. 2]. To help researchers assess their travel habits, the policy was rolled out alongside the *CET Carbon Tracker*. CET's travel policy is based on the four "A" principles of raising *awareness*, finding *alternatives* to the current emission intensity of "conducting and meriting research", accepting *accountability*, and practicing *a visible culture* to inspire similar initiatives.

Four years following the original travel, a new CET Low-carbon Travel Committee was formed with the intention of updating and reinvigorating the efforts of the old committee, as the initial policy admitted that "an implementation plan should be developed where concrete measures are developed and described in more detail" [50,p. 4]. Drawing from a survey presented in Fig. 1, a report from CET Carbon Tracker,[3] and a workshop at the CET annual retreat (Autumn 2023), the new committee published the CET Low-carbon Travel Guide [9], and a report consisting of a list of recommendations for amendments to the current policy [52].

2.2.2. Copernicus Institute of Sustainable Development (UU)

The Copernicus Institute was formed in 2003 under the Faculty of Geosciences, with the aim of helping to "…accelerate the transition to a sustainable society" as "the only department at UU that solely focuses on sustainability research" [53]. The Copernicus Institute complies with the *UU Strategic Plan 2025* "to work towards carbon neutrality by 2030" [54, p. 29] and to the *UU Sustainable Travel Policy*, inaugurated in January 2023, which aims to contribute to carbon neutrality "by making less and more sustainable travel the norm, offering safe and high-quality digital education and facilitating the possibility of remote collaboration" [10]. The new policy is coordinated and communicated by the UU Sustainability Office. The Green Office, which is part of the Sustainability Office, serves as an "open platform for students and staff members to launch their new plans and projects for a more sustainable university" [55]. An important example of a project that the Green Office launched is the Green Teams project, which means Green Teams should be installed at each faculty separately. So far, only the Geo faculty Green Team is operational. The aim of the Green Team is to "assess the current status of sustainability at their faculty, investigate solutions, and initiate projects" [55], including actions related to flying less.

3. Methods

Drawing on participant observation, the grey literature and interviews (May 2023–January 2024), we explored UiB and UU's efforts to implement lower-carbon forms of academic travel and conduct.

In relation to participant observation, as members of the Low-carbon Travel Committee at CET and the Green Team Geo at UU, we had the opportunity to interact with the various elements and people responsible for and engaged with the travel policy. While being Ph.D. candidates at our respective institutions does raise unique ethical and positionality questions, they are counterbalanced by the opportunity to be more thoroughly engaged and aware of the currents influencing researchers at our university as we are one of them.

To complement our first-hand experience and work with travel policy, we conducted semi-structured interviews which covered the 3Is, using snowball sampling both to fill in our knowledge gap and to have a more removed source of empirics. Our aim was to gather diverse perspectives on the policies and policy making processes with our interviews, by including participants both at the policy making and user side, from various levels, and with different views and opinions towards the policies. This resulted in interviews with two research participants in Bergen, alongside a group interview with three students who earlier had published a report on academic flying at UiB [51]. At UU, we interviewed 11 research participants. Interviewees consisted of students and employees, including junior and senior climate scholars, policy makers and sustainability policy advocates. We also interviewed a scholar from outside the two universities who advocates for alternatives to flying (see Appendix). Research participants have been anonymized, and any names used are pseudonyms.

Finally, to further assist us in gathering in-depth data on the 3Is, we analyzed the central and departmental travel policy documents at both universities. When necessary, the data and interviewees were translated by the authors from Dutch or Norwegian to English. We analyzed our data based on the 3Is framework and coded the interviews manually. While we do draw upon two case studies, they are meant to be additive and not comparative. In other words, we do not compare how the two universities compare to one another, but how together they can better inform us on some of the ongoing currents in northern and western Europe.

4. Findings

4.1. CET

4.1.1. Institutions

4.1.1.1. Structures and systems. At the highest level, the state dictates that using public money responsibly means traveling using the most

[2] UiB's climate target consists of being carbon neutral by 2030.

[3] Completed by half the staff, this tool helped account for the emissions from individuals and events organized by CET.

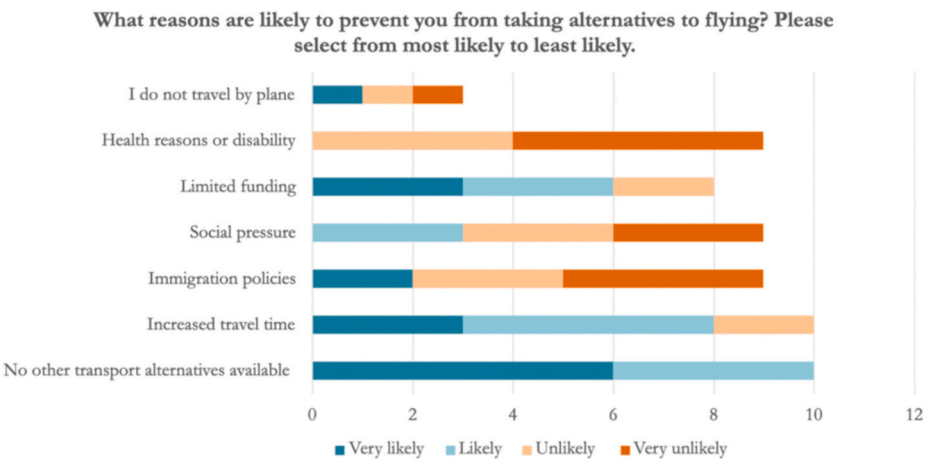


Fig. 1. Sample of a question in the survey conducted by the CET Low-carbon Travel Committee and the response from respondents (CET, 2023). The Y-axis lists potential reasons likely to prevent individual CET researchers from choosing alternatives to flying. The X-axis shows the number of responses across four categories with corresponding color codes. This visual illustrates the distribution of likelihood that these factors would discourage respondents from opting for alternative modes of transportation.

affordable means (along with considerations of time-use, which in practice is less applicable to researchers) [56]. The next level of decision-making, the university, must follow these guidelines, but also encourage considering the environment, which, while unspecific, allows for a broader interpretation of how funds can be used. The faculty level (in this case the Faculty of Social Science) is the body that will have to implement the guidelines. One can argue that the faculty level is closest to the realities of individual departments (i.e., geography) and CET which contributes to decision making, yet this level has less freedom to adjust or modify rules.

There is an intricate interplay between the center's (i.e., CET)/departments, their faculty, and the university steering committee. What falls under the purview of whom can be a challenging terrain to navigate. For example, as a part of the 2018 travel policy, the CET secretariat decided to make low-carbon travel funds available, covering the difference between ground and air travel, including room and board for the journey if it is overnight. However, in 2023, when the plan was submitted to the relevant authorities in the faculty for approval, the proposal was rejected, as it went against the state travel policies of using the most economical means of travel. In an interview with a research participant (Higuel[4]), a member of the CET travel committee admitted that as a center we have "very, very limited amount of agency, the type of maneuvering space that we have as a center is essentially through, you know, trying to encourage to create a culture of transparency and openness". This said, CET has worked to provide opportunities for travel alternatives. For example, the bi-annual Beyond Oil conference often has a virtual component and the CET Lunch Seminar offers speakers the opportunity to present their work remotely. These examples highlight how there are opportunities for trying alternatives to flying.

4.1.1.2. Laws, rules, regulations, and standards. In the context of travel, in Norway, there is a long-standing principle of taking the "cheapest mode of mobility" [57], which is required not just by the university, but the Research Council of Norway. In an exchange with the university's finance department concerning low-carbon travel, it was made clear that the general feedback is that the university must follow the government's travel rules, *Statens Reiseregulativ*, which requires travel expenditure to be at the lowest possible level. The new state regulations have been amended to acknowledge that although the most economical form of travel should be used, consideration should also be given to the environment [58]. The vague nature of this statement is confusing even for policy makers.

Furthermore, the University of Bergen requires that all employees use the University's travel agency, Berg Hansen, if a travel agency is used. Berg Hansen does not offer booking for land travel outside Norway[5] and even within Norway, it is limited in its offerings. As a consequence, what could be a five-hour bus journey from Stavanger to Bergen would require a 15-hour on train trip. To help employees navigate through travel plans, UiB drew up a travel planning checklist, inspired in part by the 2018 CET Travel Policy. This policy is presented in Table 2.

Alongside the checklist, the UiB travel policy also contains a second component, which is meant to provide a "guideline for prioritizing flights," such as fieldwork, and trips that safeguard the interests of the university. However, it concedes that "it is up to each unit to make the final judgment on which journeys should be prioritized" [59].

4.1.1.3. Communication, coordination, consultation, and participation mechanisms. One of the challenges faced by those interested in the travel habits of university faculty and staff is a lack of reporting requirements, which makes two options available. The first one is to use the data provided by the University travel agent, Berg Hansen. However, a large number of trips are booked outside this system. As bluntly put by a university staff member (Dina), "if we use the numbers from Hansen, it would not be correct". Alternatively, everyone uses the same system for travel reimbursements, and that can generate more accurate data. Yet, it is not possible from the data available to glean the purpose of the trips, which can allow for a more nuanced and targeted effort to modify travel policy.

Beyond this, there is a lack of awareness of the travel policy itself. A member of staff (Dina) admitted that "one problem is … communicating and making everybody know that this is actually our policy, and this is our goal of becoming climate neutral and so forth… [In] a private company, it's easier to say this is it and you'll just have to do it." At the same time, the challenges faced by researchers are not always known by the staff either. For example, when confronted with the limitations of booking alternatives to flying through Berg Hansen (e.g., limited ground travel services in Norway or alternatives to flying abroad), a member of UiB's climate neutral by 2030 member said: "wow, that crazy… that's useful information for looking into when it is time for a new one

[4] All names are pseudonyms for protecting the identity of research participants.

[5] It is worth noting that our observations suggest that this is a problem common to many institutions in Europe. For example, author 3 has faced similar issues at the University of Helsinki.

Table 2
UiB's travel planning checklist.

Consider Alternatives
Such as reconsidering whether the trip is necessary and if so, what are the alternatives to flying
Plan, Prioritize and Combine
For example, trying to accomplish several things at once, such as a conference and a meeting
Reduce Emissions from Events Organized by the UiB
Such as organizing internal seminars in locations that do not require flying

Note. UiB Sustainable Travel Policy [59].

[contract]… I haven't been involved [in contract negotiations], but maybe I will be in the upcoming ones."

Some of this failure of communication can stem from the fact that while there is an environmental contact in each faculty, they are not on the university's *Climate Neutral by 2030* steering committee. Reflecting on this issue, a member of the committee said "that is one of the issues. They are not in the places that make decisions" (Dina).

4.1.2. Ideas

4.1.2.1. Definitions, paradigms, framings, and discourses. Like institutions, ideas can align or contradict one another at several levels of policy-making. For example, while the state might see itself as gaining legitimacy by reducing the cost of public sector travel by taking the least expensive form of travel, a research center like CET seeks to conduct "research with as little environmental and climatic footprint as possible" [60]. Yet, both have a shared commitment to sustainability. These differences result in incoherence in policies affecting staff.

Another important issue to highlight is a recognition of the broader discussion about how academic institutions frame sustainability and how air travel policies fit within it. UiB, for example, has committed to 89 % emission reductions through targeting travel, goods and services, energy, and space use by 2030. This figure is 11 % short of its climate neutrality goals, which will be fulfilled by carbon credits. However, UiB sees its primary contribution to the "green transition" from producing "knowledge that benefits society through education, research and innovation" [60].

4.1.2.2. Societal norms and values. There is a belief among academics on the connections between traveling and success, but as discussed, earlier research paints a more complex picture. A researcher and member of the Low-Carbon Travel group at CET (Higuel) emphasized that part of the work for reducing travel-related emissions consists of "destroying the myth that to be successful … you have to travel a lot … that's clearly not the case… [So it] is necessary to keep on destroying or keep on criticizing, because it's often an argument that people use.[6]" He went on to extend this to the conduct of research itself, arguing in favor of deploying our creativity and imagination to find alternatives: "it's about showing alternatives of what a good academic life is and what a good life is in general."

Yet, there are broader changing cultural currents. In 2019, UiB management proposed a climate measure that prevented departments from traveling abroad for internal seminars. When speaking with an external expert on the topic, he admitted he used to "fly a lot, like a lot of academics," but it was his encounter with the book Heat, by George Monbiot, that made him rethink his choices (Sandford). In our observations, this is a choice made by some other researchers in our orbit, including a Professor II at CET, who travels by train from the UK to Norway, when visiting CET. While we do not mean to imply that these individual instances represent the norms and values of most academics, they suggest the existence of those practicing alternatives dating back over a decade.

There are also material changes occurring, driven by evolving currents, norms, and values. For instance, starting in 2025, CET will require all new grant applications to include a Carbon Management Plan (CMP). The CMP template will ask applicants to consider the emissions generated by their project, provide a justification and prioritization of these emissions, and undergo an audit by a member of the research leadership team. Once finalized, the plan is to allow for the template to be made available for others as a reference and inspiration.

4.1.3. Interests

4.1.3.1. Preferences and agendas held by actors. While there is a growing awareness of emission intensity of travel at the University of Bergen, and an interest in reducing it, there are conflicting priorities guiding the various nodes of decision-making—such as lowest emission vs. lowest cost—challenging the ability to implement an ambitious policy at CET. Nevertheless, according to a staff member familiar with these issues, the university has witnessed a 47 % reduction in its emissions when the analysis was last carried out,[7] when compared to 2018 levels (Dina). However, given the lack of tangible measures and any changes to the travel policy, it is difficult to attribute the change to variables outside the impact of COVID-19 on travel, thus, a travel rebound is possible for 2023 reporting year as the effects of the pandemic wear off.

A measure worth reflecting on was a proposal to require each faculty to cut its travel emissions by 10 % annually, and imposing a levy if they were not met. However, this proposal was deemed unfavorably by the university board when other, more positive alternatives were available, such as the *climate fund* which "is designed to finance measures aimed at getting staff and students involved in reducing the university's climate footprint" [60].

4.1.3.2. Broader power dynamics and distribution of power. The distribution of power and decision-making means that even in the presence of feasible alternatives, CET's ability to provide alternatives for its staff is limited. As pointed out by a member of the low-carbon travel committee (Higuel), "that is why we are left with a very little amount of agency. The type of maneuvering space we have as a center is to try to encourage, create a culture of transparency and openness and support researchers when they want to have a no-fly policy themselves. But overall, it is difficult to engage with these questions in a systematic way." Furthermore, while there is a general recognition of the need to reduce emissions, there remains a diversity of opinion on measures and ensuring equity [61].

Despite these limitations, the Travel Policy has been influential beyond CET. It created an internal (and external) dialogue, while encouraging experimentation, such as booking a train from Oslo to Bergen for participants of the Beyond Oil conference, the *CET conference train* [52]. It also enabled connecting to movements, networks and efforts outside Bergen. The *Trails Project* in Stockholm invited CET to be a part of its pilot carbon tracker platform, and to engage in cooperation with the *Transflight* research group at Graz University. Importantly, the travel policy has functioned as a source of inspiration for UiB itself

[6] See Kreil [27] for a discussion of social constructivist narratives of academic air mobility.

[7] The most recent figures went until the end of 2022. At the time of the interview, results for 2023 were unavailable, but were expected soon.

(Dina). These examples and the new CMP highlight opportunities for CET (and similar centers) to play an important role in effecting positive change; while CET's institutional policy is limited, it can act as a trailblazer and source of inspiration.

4.1.3.3. Distribution of resources, income, and wealth. At the same time, there has been a recognition that individual circumstances will vary at times, such as through family commitments, parenting, and other limitations that reduce one's flexibility in using alternatives to flying. In our observation, these concerns are often raised in discussions pertaining to equity in travel. On the other hand, there is a general recognition in the broader movement (Sandford) and the Low-Carbon Travel Committee that senior academics could play a key role in enabling alternatives, in other words "having buy-in from senior academics" (Higuel), yet statistically, they fly the most.

4.2. Copernicus institute of sustainable development

4.2.1. Institutions

4.2.1.1. Structures and systems. Previously, the UU travel system was centrally organized around the 'Treinzonekaart', a declaration system for additional costs related to train travel. Meant as an incentive for opting for train travel over air travel, the 'Treinzonekaart' lacked frequent use, arguably because use was voluntary and cost differences were only marginal (Timo; Annika).

Aligned with UU operational structures and upon request by the Executive Board (Beau; Annika), the Sustainability Office reshaped this centrally organized system and initiated the binding *UU Sustainable Travel Policy* [10], developed at the central level and meant to be implemented at the faculty level. Faculty structures need to establish a Green Team and a sustainability manager, enabling the respective faculties to take responsibility for the finances and monitoring of the *UU Sustainable Travel Policy* (Beau; Timo; Annika).

4.2.1.2. Laws, rules, regulations, and standards. Under the *UU Sustainable Travel Policy*, "travelling less, more sustainably and more efficiently will become the standard" [10]. In practice, as Table 2 shows this means that from January 2023, UU employees must comply with a set of step-by-step principles for business trips. Technical measures have been implemented to facilitate flying less, such as the online Train Check, which enables UU employees to get "insight into their travel options quickly" [62], and Studio41, a fully furnished high quality video studio to record keynotes or record podcasts which enables digital alternatives to travel (Esmée) [63].

4.2.1.3. Communication, coordination, consultation, and participation mechanisms. The principles, presented in Table 3, are based on a benchmark of travel regulations of seven large universities in The Netherlands and internal organizational knowledge (Beau; Timo; Annika). The total number of kilometers, the total number of hours, as well as exceptions were included in this benchmarking. Also, two stakeholder dialogues were organized with "valuable people in management positions, mostly faculty directors and HR, who could provide high quality input and embeddedness in the organization. [Yet] a broad set of stakeholders was not consulted" (Timo). Because of this, junior staff were not included in this process (Myrthe; Theo; Timo).

The policy was launched through an externally organized communication campaign entitled *Right on Track* [62], to create awareness and motivation among UU employees and exposure was generated through faculty posters and social media (Beau; Annika). Despite the communication campaign, UU employees often remain unaware of alternatives such as the recording studio (Theo; Annika). Moreover, policy makers remain uncertain about how to coordinate policy implementation. For example, according to the policy additional train costs can be declared, but the funding source is not specified. As a result, there is uncertainty about whether the costs need to be paid out of a researchers' own research budget (which does not always allow for this) or by the faculty (Annika). This prevents UU employees from fully benefitting from the policy in practice (as was experienced by one of the authors).

Moreover, flying practices are not yet monitored as "the data for air travel are based on expense data for travel and accommodation and therefore give too inaccurate a picture to include in the carbon footprint" [65,66]. This means that policy implementation is based on individual cases and is not yet binding in practice (Annika; Roy). Options for gathering data on modes of mobility and CO2 emissions consist of coordinating the monitoring at the central level through an internal or external travel agency, which is costly and reduces individual freedom; monitoring through individual declarations, which requires high amounts of manual effort; or adding a tick box when academics declare their travel costs, which has institutional constraints, due to lack of time in the IT department (Annika; Wil).

4.2.2. Ideas

4.2.2.1. Definitions, paradigms, framings, and discourses. The *UU Sustainable Travel Policy* operationalizes flying less (in terms of alternative travel by train) and travel reduction through online alternatives. It builds a discourse around "making less and more sustainable travel the norm, offering safe and high-quality digital education and facilitating the possibility of remote collaboration" [10]. In doing so, flying less is positively framed "by focusing on what is *possible* rather than *impossible*" (Annika). The positive framing is also reflected in the policy itself, which specifies an overnight stay being possible, as presented in Table 3. "This might encourage people to take the train even beyond the 700 km or eight hours of travel, because in this way some journeys that the policy does not cover can still be executed comfortably" (Timo).

This positive framing might encourage employees to fly less, yet insights into the actual effects of the policy (framing) remain unknown, as the policy has not yet been monitored. According to an UU employee "the idea behind [the new policy] is great, but at the moment, it is promoted as an awareness campaign, which means no strict procedures are attached to it. We expressed these concerns, but in our opinion, nothing really happened with that" (Theo).

4.2.2.2. Societal norms and values. Aligned with broader societal values, UU's aim was to reduce CO2 emissions from 2014 [65], but COVID-19 provided a kickstart to put this into practice. "[Since COVID-19] working from home, or presenting online, or collaborate remotely, has become normalized in the organizational culture and society as a whole. [Also] it is valid now to stay at home for the simple reason that traveling takes a lot of time" (Timo). Moreover, as "everyone is involved in business travel transport modes" (Annika), UU wants to position itself as a pioneer of sustainable travel by framing flying less as "the new normal" (Beau).

This reframing of norms and values seems promising, yet pre-existing and often persistent norms and values prevent them from being embedded in travel practices. Business trips are deeply rooted in the academic culture (Esmée) and "valued as part of academic life, part of the beauty of the job" (Roy). Moreover, perspectives on research processes remain goal-oriented, in which the goal of efficiently reaching certain research objectives justifies the modes of travel. For example, the choice to only include business trips under 700 km or under eight hours is based on the idea that the new policy "covers one workday" (Timo). For trips exceeding these boundaries, "flying remains the default" (Roy). This also becomes visible in a UU wide carbon offsetting policy initiative, which does not include UU (long distance) travel practices [66].

But can this be justified? "Flying is quick and cheap, but there are also many hidden costs. These are easy to ignore because everyone is doing it. But when you think about it, the frame of reference within

Table 3
Principles of the reshaped UU travel policy.

Business travel should be reduced whenever possible by using video conferencing or other digital alternatives.
Travel will be by train if the distance is less than 700 km, or with a travel time of up to eight hours, calculated from Utrecht Central Station.
For destinations under 700 km, flying is only an option in highly exceptional situations and after approval from your supervisor.
Final destinations beyond 700 km or train journeys of more than eight hours can also be done by train. A corresponding additional overnight stay can be claimed.
Is your destination further than 700 km and is air travel necessary? Then direct flights from airlines with a CO2-efficient aircraft should be chosen as often as possible.

Note. UU Sustainable Travel Policy [10].

which we operate today is actually quite extraordinary" (Gerard). This way of rethinking norms and values around flying leads to questions on what constitutes good science and a good academic life. What would (climate) science and practices look like if the field were to emerge today?

4.2.3. Interests

4.2.3.1. Preferences and agendas held by actors. In general, the Faculty of Geosciences, of which the Copernicus Institute of Sustainable Development is part, shows commitment to sustainable travel and the new travel policy (Beau; Annika). "We notice that people comply to it and are motivated to comply to it, instead of trying to find loopholes in order to avoid taking the train" (Annika).

At the same time, the Faculty of Geosciences keeps a record of the highest number of flights. The fieldwork-heavy nature of geosciences research and efficiency are mentioned as dominant reasons for this (Debora; Roy). "Sometimes the train takes more time, and this remains an issue, as everyone's agenda is packed" (Annika), especially among (more) senior staff has little time (Beau). Researchers also justify long-distance flying for fieldwork for continuation of high-quality research as opposed to alternatives when residential researchers or citizens collect the data (Roy), implying a debatable lack of awareness or ignorance in terms of researchers' reflection on impacts related to their own research process and attending in person is mentioned as important for researchers' careers (Myrthe; Roy).

4.2.3.2. Broader power dynamics and distribution of power. Faculty managers are responsible for policy compliance and policy funding within their faculty (Beau; Timo; Annika). The reason for this is that the *UU Sustainable Travel Policy* is "meant to stay. […] We want to create a permanent incentive and not for example a temporary fund" (Annika). This seems promising, but it does not come without risks: "It is a beautiful idea, but in practice, the policy means that if a faculty or staff member has less money, it means less opportunity to fly less. In combination with the new policy to avoid flying under 700 km this creates a risk of some staff members having less opportunity to visit places with potential risks for their career" (Myrthe; Theo).

Differences in the extent to which different employees can benefit from the policy and consequences for policy compliance are currently not on the monitoring agenda, as travel expenses are assumed to be covered by (external) funding budgets (Annika; Debora). Decisions revolve around a monitoring mechanism and the criteria for what will be included in the monitoring and what will be based on "whether the policy is complied with or not, and the data will show whether this is the case or not" (Annika). To do so, faculty consultations with faculty directors are to be organized in the near future to evaluate the effectiveness of the reshaped travel policy. Yet, if academics cannot fly due to a lack of resources based on their position of power within the faculty, this will not appear in flight data, since absence of flying cannot be tracked. As such, it is unsure whether inequality issues will become visible, risking negative consequences for people's careers or research, and perpetuating existing inequalities between employees.

4.2.3.3. Distribution of resources, income, and wealth. A subject of concern are business trips exceeding 700 km or eight hours of travel, which are currently not covered by the policy. "Lots of employees fly long distance. What to do about that?" (Timo). Also, some employees' personal circumstances arguably make them more vulnerable to certain travel conditions. For example, employees with children or "people who feel unsafe when traveling late" (Beau). "Is it appropriate for a woman to arrive at Paris Nord late at night?" (Annika). This leads to questions around equal benefits of the *UU Sustainable Travel Policy*. "That is something we want to look into. What are the effects of the policy? How do managers experience it? […] In order to [make the policy widely accessible] we did leave exceptions unspecified on purpose, but at the moment we are not sure" (Timo).

Apart from the 'exception' option, UU invested in digitalized opportunities "accessible to everyone" (Timo). Yet, despite the opportunity of the studio to handle technicalities such as presenting at a conference, these digitalized opportunities do not cover social costs related to career prospects which are likely unequally distributed between employees. Junior staff arguably benefit more from the social perks of flying, including building a network and gaining experience in the field, and therefore they are likely to have more to lose than senior staff who already had this experience (Myrthe; Theo; Roy). According to an interviewee "eventually we want to reach carbon neutrality and to succeed in this, there is still a lot to be done. I do hope [the new policy] will open up a conversation about what else there is we can do about this" (Timo).

4.3. Bringing the two cases together

Our findings show both differences and similarities in travel policies and practices between the two climate departments. The combined results are presented in Table 4. In general, at both UiB and UU, a growing sense of urgency can be observed regarding the need to cut emissions related to travel. At UiB, so far this has translated into a soft travel planner checklist and guidelines for flying to help navigate employees towards more sustainable travel. UU adopted a hard policy which requires staff to travel on land within a 700 km radius, yet this policy is not enforced, because it lacks a monitoring system.

For *institutions*, we found that UiB needs to adhere to national policy

Table 4
Combined results.

Variable	Case study UiB	UU
Institutions	National institutional constraints Soft travel planner checklist Lack of data for monitoring	No national institutional constraints Central hard policy within 700 km Lack of data for monitoring
Ideas	Researchers' lack of awareness about (institutional) alternatives Researchers value travel as needed for success and effective research	Researchers' lack of awareness about (institutional) alternatives Researchers value travel as needed for success and effective research
Interests	Growing awareness about flying less at central university level Dependence on national prioritization of low-cost travel Distributional effects unclear	Commitment for flying less under 700 km For travel above 700 km climate researchers remain frequent flyers Distributional effects unclear

Note. Compiled by authors based on analysis.

which requires that the cheapest mode of travel available be taken (though with limited flexibility for environmental concerns). In practice this often means flying at the expense of alternative modes of travel and emission cuts. UU does not have these institutional constraints and could therefore adopt a binding university policy either to travel less, or to travel more sustainably, with the option to declare extra costs.[8] The question remains about how to monitor travel behavior, as both universities lack reporting mechanisms on travel data—CET's CMP could serve as an early effort in this direction.

For *ideas*, at UiB and UU we found a lack of awareness among employees in terms of institutional options for flying less, and a lack of formal procedures for researchers to reflect on the impact of their travel behavior as part of their research process. The reason for this could be that within academia, travel is deeply valued as necessary for success and effective research, which justifies flying to practice 'good science for the sake of the climate'.

For *interests*, both CET and the Copernicus Institute of Sustainable Development depend on the central level to institutionalize change. At UU, commitment to do this can be observed at the central level, which resulted in a binding travel policy and accompanying awareness campaign. At UiB, and among Norwegian universities more broadly, there are ongoing conversations about adjusting travel policies [2]. However, as yet, the extent to which employees can equally benefit from the new policy (because employees have different travel needs and different access to time and financial resources to benefit from the policy) is unclear.

5. Discussion and conclusions

Despite universities' commitments to carbon neutrality and the UN Sustainable Development Goals, lower-carbon forms of travel are often not successfully integrated into academic travel policies and practices. In this article, we revealed that finding alignment between carbon neutrality targets and travel policies and practices is not a purely technical endeavor but a sociopolitical one. In applying the 3Is framework [32], we analyzed how policy change for flying less can unfold by analyzing institutions, ideas, and interests as part of two case studies at CET (UiB) and the Copernicus Institute of Sustainable Development (UU). As the role of institutions, ideas, and interests is context-dependent, we like to note that findings based on our empirics are not generalizable to non-academic contexts. While we cannot make any direct statements about travel policies and practices for universities that we did not include in our research, our diverse interview sample allowed us to identify patterns that are relevant to other academic air travel policy contexts as well. We showed that the academic road to flying less is not simply one about emissions cuts, but is a highly complex one that requires deep institutional, distributive, and ideological reflections on what constitutes 'good science', in how and for whom to meaningfully facilitate a change towards flying less in academia.

Our findings imply that to fly less often in academia, a push for prioritizing long term sustainability over short-term efficiency is needed at the central level. This push needs to take into account all dimensions of sustainable development: the social, the environmental, and the economic. The 3Is framework showed to be useful in gaining a deeper understanding of how different priorities are pursued in policy-making processes for flying less in academia, revealing tensions and tradeoffs which cannot be addressed through technical mechanisms. Universities can serve as pioneers in the low carbon travel transition, but they need institutional leeway to act as such and to prevent stagnation resulting from (national) policy constraints. Furthermore, the needs of different university employees need to be reflected in travel policies. These findings can be understood in the light of broader debates on mobility justice [43,67,68] and 'sustainable aviation' [69,70] in the context of (academic) air travel. Similar findings related to inequalities in terms of the capacity to travel have been found, noting that personal factors such as age, gender or parenthood may place individuals in different positions when it comes to their ability to travel [71]. When designing travel guidelines for institutions, understanding the personal factors behind the reasons to travel or to stay on the ground may provide a valuable asset, both in terms of justice and policy effectiveness. For UU, this could be organized as part of the current monitoring phase. UU policy makers are currently exploring ways to monitor the new travel policy: why not include questions related to mobility justice and (long term) distributional effects as part of this exploration?

Enabling better travel futures requires researchers to have access to better tools both for more sustainable travel, and for traveling less. Tools related to sustainable traveling include allowing for booking trips with contextual information, and allowing the setting of annual emission targets or budgets that can be helpful in assessment and developing "low-carbon skills". Tools for traveling less, for example, can be about building virtual networks [16] or research networks to collaborate on the ground and collect data. These tools facilitate strives for carbon neutrality, but also relate to discussions about decolonializing higher education, through reflecting on "nature" and the appropriation of the commons [15]. The role of travel also needs to be re-evaluated [36]. At the moment, employees are often accountable for additional time, effort, and finances if they want to cut flying, especially long distance. This could be changed by rewarding employees who take an alternative mode of travel or choose not to travel, for example. Funders also play a pivotal role in enabling alternative travel futures.

As our findings suggest, COVID-19 provided a kickstart for seriously contemplating alternatives to flying and broader behavioral changes [13,72]. We propose that it is time to take a step further and undertake a critical revaluation of what constitutes good practice present-day research practice [14,41]. To do so, we must re-examine the uncomfortable conversation about how we assess researchers, what role travel and specifically flying has in this respect, and what truly is needed to accommodate this normatively and practically challenging change. In practice, in-person participation (over digital alternatives) and ground travel (as opposed to flying), will have their unique place in the future of academic mobility, but the procedure by which these are determined need much attention.

CRediT authorship contribution statement

Nikki J.J. Theeuwes: Writing – original draft, Visualization, Validation, Project administration, Investigation, Formal analysis, Conceptualization. **Shayan Shokrgozar:** Writing – original draft, Validation, Investigation, Formal analysis, Conceptualization. **Veronica L. Ahonen:** Writing – review & editing, Writing – original draft, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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[8] Extra costs are often declared from the researcher's own project budget, which can cause frictions with other budget expenses.

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Appendix A. Interviewee list

Alias	Profession	Organization	Date
Beau	Communication officer	Utrecht University	3 May 2023
Myrthe	Engaged student	Utrecht University	1 June 2023
Theo	Engaged student	Utrecht University	1 June 2023
Timo	Policy maker	Utrecht University	17 May 2023
Annika	Project manager	Utrecht University	18 July 2023
Debora	Coordinator	Utrecht University	25 July 2023
Wil	Project manager	Utrecht University	14 August 2023
Esmée	Communication officer	Utrecht University	23 August 2023
Isabeau	Policy advisor	Utrecht University	6 June 2023
Roy	Project manager	Utrecht University	5 September 2023
Gerard	Expert climate ethics	Utrecht University	6 November 2023
Clara, Andreas, Ottar	Three engaged students	University of Bergen	25 April 2023
Dina	Environmental Coordinator	University of Bergen	1 December 2023
Higuel	Low-Carbon Travel Member	University of Bergen	18/19 December 2023
Sandford	Alternatives to academic flying expert	Vassar College	22 January 2024

Data availability

Data will be made available on request.

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