Nocturnal emissions

Like many scientists, I seem to spend half of my life on planes or in airports. As a result, I find myself constantly berated by my more environmentally concerned friends for wasting the Earth's precious resources and contributing to global climate disruption. The same friends also laugh at my pathetically antiquated phone, with its quaint old keypad with real buttons. Surely one could transact every kind of business in a far more efficient and environmentally friendly way, using the latest web conferencing tools or just plain old Skype. Why, three-dimensional, holographic mobile devices are surely just around the corner, and even today, a meeting can just as easily be held with the participants remaining in the comfort of their own offices. Or if they prefer they could just as well be in nocturnal seclusion in their cottage in the Scottish highlands or in a tent in the Atlas Mountains.

So why on earth does anyone spend whole days repeatedly removing their footwear, belt or, in my case, my punk jewellery (unless it has already been confiscated by the customs authorities on the grounds of being an undeclared weapon)? Why does anyone even bother to fill out the complaint card because the special meal, ordered six months ago, was not provided? If, indeed, any meal is provided at all, however unappetizing. And why would anyone in their right mind select a window seat? Not to mention the cancellations and involuntary re-routes due to volcanic eruptions, light snowfall in Chicago, French air traffic control strike, malfunction of the plane's toilet etc.

Despite all of these irritations, travelling in person remains the best way to nurture all those interactions upon which the effective practice of science depends. Most scientists travel in order to attend conferences, where vital contacts are made. Finding a postdoctoral position or recruiting someone as a postdoc, establishing a

collaboration or progressing an old one, or just debating the merits of different interpretations of a body of data are all greatly helped by meeting face to face. All this could be done by teleconferencing, but it is a very poor substitute.

Furthermore, institutes like mine, located on the farthest flung edge of nowhere, need an international seminar programme as a vital plank of graduate education. If all we had were a weekly webinar, people might as well just read the literature or watch YouTube. And Tampere is far from alone in this regard. 'Nowhere' has many edges, including much of the Mediterranean, the fly-over states of the USA and the whole of Australia, not to mention the rest of the southern hemisphere.

Many of us also travel for those sundry 'expert' tasks that foster scientific excellence via peer-review: whether serving on a grant panel, conducting a site-visit or attending an interview in connection with one's own fellowship application. It's hard to see how any of that could be satisfactorily undertaken remotely. In my case, I should add the pressing need to meet regularly with my editorial team in Heidelberg and, at least occasionally, with my own research group.

Would anyone seriously prefer to conduct a PhD examination by video link? Considering that the student has dedicated four or five years of her life working for that day, the least she can expect is that the examiner is prepared to spend a night or two in an over-priced airport hotel to make the defence a real-life event. Of course there is a downside: if the examiner arrives completely exhausted she is also unable to be at her sharpest. But the way around this is simply to organize such events at an appropriate pace, give all concerned a chance to reset their circadian clock, and indulge in some mental as well as physical relaxation before the duel commences.

Personally, I'd be very happy to find an excuse to travel less, at least on business. But it would be even better if society could invest more seriously in improving transportation so that it wasn't so expensive, inconvenient, polluting and resource-consuming. Technologies for maglev rail and for supersonic flight already exist, and need only to be developed to an affordable level. Although most people would dismiss these as prospects too far off to affect their lives, the same could have been said about the motor car in 1900 or the first commercial airliners in 1930. It's also worth remembering that as recently as 1985, mobile phones were as bulky as a TV set, whereas TV sets can nowadays be as miniaturized as a mobile phone.

Remote devices already allow for follow-up meetings, once participants are well acquainted, but the experience still falls way short of a real meeting. I recently attended a video meeting with a research group plus a remote participant. Afterwards I felt really guilty that the remote participant was largely ignored by the rest of us. Not because she had nothing to say: simply because she wasn't really in the room. Anyhow, the most important such device—the telephone—was invented well over a century ago, and one could argue that the only major advance since then is e-mail. My own quality of life would be considerably enhanced if someone were able to invent a technology that allowed instantaneous, hassle-free airport security screening. In contrast, at least in my opinion, a laptop without a keyboard, masquerading as a music player and a games console, isn't of much use to scientists needing to execute all the professional tasks that travel enables. Spending a night at home curled up with a good device may be relaxing: still, it isn't a substitute for human contact.

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