Securing the European ‘Homeland’: Profit, risk, authority
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6. Governing in the Space of the “Seam”: Airport Security After the Liquid Bomb Plot

Introduction
On the night of August 9th, 2006, British authorities arrested 24 men and charged them with plotting a series of attacks on trans-Atlantic flights using explosive liquids smuggled aboard in soda bottles. Three years later, ringleader Abdul Ahmed Ali and his two closest associates, Tanvir Hussain and Assad Serwar, were found guilty of conspiring to bomb at least seven airliners flying to destinations in the US and Canada. A High Court judge imposed life sentence with minimum prison terms of 32 to 40 years, calling the plot “the most grave and wicked conspiracy ever proven within jurisdiction,” and only comparable to the September 11 attacks (quoted in Burns, 2009). The sentence followed a first trial in 2008 in which the jury had convicted the three of plotting murder, but failed to reach verdicts on the charge of a conspiracy to detonate liquid explosives aboard airliners. During the first trial, the defense successfully denied that the three men intended to target airplanes, arguing that no airline ticket had been bought and that several plotters had passports containing suspicious foreign stamps from Pakistan and elsewhere, which would have prevented them from boarding a US-bound airplane. The defense also pointed out that there was little evidence that the suspects planned to strike immediately: the group had not yet made the hydrogen peroxide needed to construct the bombs, and there were questions about their technical capacity to successfully do so. Further still, a number of martyr videos made by the defendants and
shown in court appeared amateurish, with some of the defendants smiling and stumbling during their video.

While questions of immanency and sophistication were debated during trial, this was in stark contrast with the immediate responses to the alleged plot. UK and US authorities instantly banned all liquids from going through the airport checkpoints, causing major backups for passengers worldwide at the height of holiday season. At Heathrow, hundreds of passengers jammed in the airport terminal as airline officials handed out clear plastic bags for their limited number of carry-on items. A great number of flights from and to the UK were cancelled, and those flights that did take off were half-empty because passengers were struck in security lines awaiting body searches. Newspapers and magazines were seen as suspicious – the plotters allegedly planned to circumvent security officials by bringing erotic magazines in their carry-on luggage – and bottles containing baby food and milk had to be tested by the accompanying passenger. Later that month, the US Transportation Security Authority (TSA) introduced the new 3-1-1 system, allowing passengers to carry 3.4 ounce bottles (100 ml) in one clear, plastic, zip-top bag per person. Briefly after, the European Commission followed with Regulation No 915/2007 that imposed Europe-wide restrictions on liquids, aerosols, and gels, while stating that “developments in screening technology should, in due course, provide solutions to these problems” (Commission of the European Communities, 2007b). To date, strict regulations remain in place, limiting what passengers can bring onto a flight in hand luggage.

Let me emphasize, here, that I do not wish to deny that the liquid bomb plot represented a real threat. Rather, my focus in this chapter is on the ways in which the plot was constituted as “an event unlike others” (Adey, Anderson, and Lobo Guerrero, 2011, 340). While crisis situations and emergencies are typically cast as events that happen abruptly and by surprise, their occurrence and significance should not be taken for granted. Like risk, crisis is a construction, “a way in which we govern and are governed” (Adam and Van Loon, 2000, 2; Amoore and De Goede, 2008a). To describe how governing in and through security events takes place, I engage with a critical body of scholarship that examines how events are assembled and governed as emergencies, disasters, or catastrophes (Aradau and Van Munster 2007; 2011; Cooper, 2008; Martin and Simon, 2008; De Goede and Randalls, 2009; Anderson 2010; Anderson and Adey, 2012;
Adey, Anderson and Lobo Guerrero, 2011). Although there exist important differences between the concepts of emergency, disaster, and catastrophe, they have in common that they are all connected to a specific conceptualization of events.

First, these are events that exceed traditional frameworks for risk assessment in the sense that they confront us with a danger we “can only imagine, suspect, presume or fear” (Éwald, 2002, 286). As Aradau and Van Munster (2007) point out, what distinguishes catastrophic risk from traditional means of risk management based on causal and calculative knowledge is that it must act upon the limits of what could be known. This understanding has given rise to numerous forms of anticipatory action to stop future emergencies before they occur, including scenario planning, gaming, and worst-case narratives (De Goede, 2008a; Salter, 2008a; Anderson, 2010). Secondly, the focus on emergency, disaster, and catastrophe occurs against the backdrop of what appears to be another characteristic of contemporary events, that is, the idea that events emerge from, and are amplified across, the circulations and interconnections that make up contemporary forms of life (Anderson and Adey, 2012, 25; see also Dillon and Reid, 2009; Anderson, 2011; Braun, 2011). Anderson and Adey (2012, 26-27) argue that emergency typically involves “claims about events and about the world in which events take place,” by which they refer to the “assumptions about normal life and disruptions to that normal life,” which emergencies always carry with them.

Building on an analysis of the liquid bomb plot, this chapter explores two sets of questions. First, it asks how the liquid bomb plot was mediated as an event that required immediate action: how was it constituted beyond risk? Secondly, the chapter analyzes the technologies, knowledge-forms, and modes of governing that are developed to protect airports after the liquid bomb plot: what is produced to keep air travel secure, mobile, and connected? To answer these questions, the event is also my methodological starting point. Following Andrew Barry, the technologies, knowledge-forms, and modes of expertise that are developed to protect airports after the liquid bomb plot are best examined “in the middle of events,” at times when “the discrepancies between … public statements … and the complexity of social forms become most apparent, and when the direction of change is uncertain and contested” (2006, 244; emphasis added). According to Barry, this methodology is likely to be multi-sited and
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oriented toward tracing the relations and flows of knowledge between the different actors involved. The case of the liquid bomb plot presents us with such a multi-sited event.

As part of this analysis, the event is understood as the liquid bomb plot plus its wider consequences. The European debates about the procedures for scaling back the liquid restrictions and implementing the new liquid-explosives screening equipment that followed the liquid bomb plot are no less interesting than the plot itself. In brief, since 31 January 2014, the European Commission has begun to scale back the restrictions on liquids, first allowing passengers to purchase duty free products over 100ml outside of Europe and to transfer through a European airport without having the item confiscated. Meanwhile, a full removal of the restrictions has remained subject to intense discussions among aviation stakeholders. Airport owners, in particular, have been lobbying against a procedure for easing the restrictions, pointing out that the state-of-the-art screening technology technology is unable to screen high volumes of liquids, has generally low processing times, and cannot be integrated into the limited space of the airport.

The debates between the aviation stakeholders take place in the context of the so-called Statement of Intent secret expert group. The group was established after the first deadline for scaling back the liquids’ restrictions failed to materialize due to heavy lobbying from the airports in the European Parliament and resistance from EU member states. It consists of representatives from industry groups (airport, airliners, tax free shops, and equipment manufacturers), the US Transport Security Authority (TSA), and the European Commission. The group serves as a space where (secret) technical matters are debated, such as the state of the new screening equipment, false-alarm rates, the type of substances the technology is able to detect, and the list of questions security staff is supposed to ask in case of a (false) alarm (“are you a terrorist?” being one of them).

This analysis is based on semi-structured interviews conducted with the main participants in this group (with the exception of the US representative) and a number of other stakeholders (see annex I). In addition, the analysis builds on informal talks with manufacturers during fieldwork at security trade fairs in London and Paris, as well as on an investigation of policy reports, media coverage, and (publicly available) airport business publications. The argument proceeds in four steps. I begin by examining how the liquid bomb plot was mediated as an event beyond risk. Drawing
on Deborah Cowen’s (2010) analysis of the “seam space,” I will then ask how the plot threatened a seemingly interconnected system of global airline movements and a mobile form of life. The chapter proceeds with a more detailed analysis of the ways in which the airport space is currently being reimagined, building on an analysis of three “future checkpoint” projects developed by the aviation industry: the Checkpoint of the Future, Smart Security, and Morpho Pass. I will conclude by reflecting on questions of governing in the space of the seam.

**An event beyond risk**

To make sense of the ways in which the liquid bomb plot was constituted as “an event unlike others,” I first turn to a short essay by Peter Adey, Anderson, and Lobo-Guerrero on the 2010 Icelandic volcano eruption and its consequences for global air travel (Adey, Anderson and Lobo Guerrero, 2011, 540). To understand how the eruption became a significant event, Adey *et al.* suggest that we place emphasis on the ways in which it disrupted, or threatened to disrupt, “the networks, infrastructures, and systems through which life is organized” (ibid; see also Barry, 2010). For them, the volcano disruption “revealed a tightly coupled, complex and quite fragile network of airline movements, logistics chains, insurance products, and the complex supra-national organization of European airspace” (Adey, Anderson and Lobo Guerrero, 2011, 388; Bennett, 2005).

At the same time, the event was constituted by these different elements. For example, part of the problem of dealing with the volcano disruption was that it appeared difficult to forecast the ash cloud’s course, development, and potential. Even though no aircraft had actually crashed, speculation over the way in which the ash would spread and its consequences for aircraft turbine engines dominated the initial responses to the eruption. In this context, the cloud’s potential effects and the consequences of a possible crash were actively present in the worries and doubts about air travel. Another element that amplified the disruption caused by the volcano was the specific organization of European airspace. In Europe, the coordination of airspace has remained a task of national governments, and this considerably weakened European government’s capacity to develop a coordinated and effective approach in the wake of the ash cloud. Arguably, the effects of the ash cloud would have been far less disruptive if a central body had been in place to coordinate the responses of individual states. According to
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Adey et al. (2011, 342), the disruption of air travel, then, emerged “as the shifting, imprecise, materiality of the ash cloud combined with airspace, insurance, and other system.” What constituted the event was an assemblage, or “an ‘environment’ of people, things, and technologies that amplified and cascaded the ash cloud’s eruption” (ibid).

For Adey and his colleagues, this understanding of the volcano eruption raises a number of important questions about the event’s initial causes and consequences. They ask, “if the event is constituted as much through the organization of European airspace as wind currents, then where does the event begin and end” (ibid)? In addition, “how to think about the causality of an event when a set of complex elements that cross boundaries between the natural and technical, infrastructural and affective make an event more than troublesome, threatening, and disruptive” (ibid)? My own focus is similarly broad in the sense that I seek to map the different elements that contributed to the constitution of the liquid bomb plot as a disruptive event. At the same time, and perhaps more so than Adey et al., I am quite skeptical of these descriptions of air travel as a “tightly coupled, complex and quite fragile network of airline movements” (ibid, 338). I consider such representations to be performative in the sense that they do not simply name, describe, or define relations, but produce the effects that they name – that is, the (highly mobile) network or system.

This is not to say that these network representations do not have real effects. The remainder of this section asks how, and with which effects, the liquid bomb plot was mediated as an event beyond risk. No actual crime or murder had been committed, however, speculation over the grave and irreversible violence, which the plot would have caused overshadowed the responses to the plot. Accordingly, the future consequences of a successful attack, as Adey and his colleagues put it, “were present in the here and now as worries, doubts, and anxieties about air travel” (ibid, 2011, 340). In particular, the “eventness” of the liquid bomb plot depended on the way in which it was understood as a network-type threat. In short, in media coverage, policy documents, and court cases, the plot was framed as familiar, sophisticated, and suggestive of a larger sequence and pattern related to international terrorism networks after the attacks of 9/11, and to al-Qaeda in particular. These framings were important because they produced a sense of urgency to intervene and stop the crisis before it would occur.
Let us now turn to a more detailed discussion of the plot. First, the plot’s significance derived from the ways in which it followed onto the events of 9/11, and, to a lesser extent, those of 11-M and 7/7 (Closs Stephen and Vaughan-Williams, 2009). Soon after its disclosure, media coverage and public statements began to address the plot as a “second 9/11,” with which the grave violence and irreversible change the attack would have brought about, if accomplished, was highlighted. As US Homeland Security chief Michael Chertoff pointed out, this was a terrorist scheme that stood out as being “of a very substantial dimension,” and of “a scale comparable to 9/11” (quoted in Dodd, 2009). The judge who passed sentence during the second trial in which the three prime suspects were sentenced to life imprisonment, concluded that the plotters were involved in “the most grave and wicked conspiracy ever proven within this jurisdiction,” in which it had been “the intention … to perpetrate a terrorist outrage that would stand alongside the events of September 11, 2001 in history” (quoted in Dodd, 2009). The judge added that, had this conspiracy not been interrupted by the security services, “a massive loss of life would almost certainly have resulted – and if the detonation was over land, the number of victims would have been greater still” (quoted in Dodd, 2009).

Second, the initial reactions to the plot indicated that the modus operandi was a familiar one that could be linked to the threat from global terrorism. Michael Chertoff claimed that this was an advanced, specific, and sophisticated plot, “suggestive” of al-Qaeda (Chertoff, 2006). Counter-terrorism experts from the US and UK said that the plot had all the signs of an operation by al-Qaeda, and that it was most likely conceived and organized in Pakistan (Burns and Sciolino, 2008). The connection with a larger and coherent functioning terrorist network was based on the fact that the plotters had made several trips to Pakistan and were in the possession of a phone with multiple sim-cards in order to make calls to Pakistan. Security officials speculated that one of contact persons with who they were corresponding in Pakistan was the mastermind of the plot, Rashid Rauf, who, in turn, was believed to put the plotters in touch with al-Qaeda’s leadership. What is at stake in these framings of the plot as suggestive of a larger pattern or network is the existence of an enemy that is dispersed, yet highly connected and global in reach. Moreover, this is an enemy that is embedded in, or accommodated by, the interconnected networks that constitute modern life in liberal democratic societies. Across public discourse, we find
that the very same conditions and systems that support our modern or mobile way of living (e.g., the airport, data and communication systems), also contribute to the formation of contemporary threats, such as global terrorism. Or, as Adey et al. (2011, 399) put it, “both liberal life and threat are carried along by the same circulations and interdependencies.”

Third, media coverage, police investigations, and court cases constituted the plotters as an innovative and sophisticated enemy. In a public statement delivered soon after the arrests, Chertoff claimed that these were not “a handful of people sitting around coming up with dreamy ideas about terrorist plots” (Chertoff, 2006). Rather, “the conception, the large number of people involved, the sophisticated design of the devices that were being considered, and the sophisticated nature of the plan” all suggested “that this group that came together to conspire was very determined and very skilled and very capable” (ibid). By comparison, Xiana Barros (2012, 60) writes that whether an airplane could be brought down by mixing a limited quantity of liquids was in fact a question that was highly debated among EU member states. The UK, hoping to upgrade the liquids’ restrictions to the EU level, claimed that intelligence information showed that it was indeed possible to produce these types of bombs and to bring down airplanes. British intelligence services also reported that the liquid bomb plot, while an isolated plot, demonstrated the willingness of individuals inspired by al-Qaeda to apply the same tactics and methods. Lacking this kind of information themselves, most member states joined the UK efforts to impose EU-wide restrictions on liquids, aerosols, and gels. The Commission’s capacity to influence the agenda, at this point, was limited, Barros argues, due to “the lack of autonomous information or intelligence regarding the likelihood of a plane exploding as a result of a bomb made from small quantities of liquid explosives” (ibid).

Interestingly, the courtroom served as a space where the impact of the bomb the plotters planned to build and their capacity to produce the concentrated version of hydrogen peroxide necessary to construct the liquid bombs was performed and reaffirmed. In an attempt to underline what could have occurred if the plot was carried out successfully, the prosecution showed a videotape of the explosion of a bomb built by government scientists identical to those the suspects were accused of making. In so doing, the prosecutors appealed to the potential violence caused by the plot, even if, as the judge reminded the jurors, there was no evidence that
the plotters had indeed fabricated such a bomb. “We need to deal with the fact that this is an allegation of conspiracy,” he said, “rather than the actual causing of explosion or murder” (quoted in Burns and Sciolino, 2008; see also De Goede and De Graaf, 2013). Moreover, in cross-examination, one of the government scientists testified that constructing these type of bombs required lengthy research, and that the preparation and transport of liquid explosive materials would in fact be extremely dangerous.

The example of the bomb simulation illustrates the hard work that goes into performing the liquid bomb plot as a networked threat, long after the plotters’ arrests. Several elements, indeed, escaped these renderings of a coherent, connected, and sophisticated enemy. These included the doubts surrounding the technical skills of the plotters, but also what appeared to be a loose connection with al-Qaeda. As discussed, the idea of a network-type connection was mainly established based on the fact that the plotters had made several trips to Pakistan and were in the possession of a phone and international sim-card with which they corresponded with people in Pakistan. At the same time, the connection with a wider terrorist network was challenged by the local nature of the plot. As it turned out from the investigations, the plotters were all British-born, locally-educated men, with family roots in Pakistan. Moreover, the bombs the plotters planned to build were based on everyday and easily-available materials, such as hydrogen peroxide, batteries, flashbulbs to act as a power source, and a powdered fruit drink, called Tang, which was supposed to reinforce the liquid explosive (Dodd, 2009).

Indeed, in later discussions, it became the local and low-key character of the plot, which helped constituting it as a particular dangerous one. Above all, what contributed to the level of risk was the idea that the plotters appeared to be capable of producing home-made liquid explosives, using everyday materials. As a former senior security official at Heathrow airport pointed out during an interview, “until 2006, the threat and risk [from liquid explosives] was correctly categorized to be low and we accepted the risk. But then, as soon as the terrorists used homemade explosives, that whole risk changed, and this became a higher, much higher risk.” He added: “It was difficult to do, but, you know, I think sufficient tests have been carried out that show that what the terrorists claimed they were going to do was feasible. So, that changed the whole threat scenario.”
The way in which the liquid bomb plot resonated with the attacks of 9/11 in terms of scale, *modus operandi*, and sophistication, significantly influenced the immediate policy reactions. My respondent drew an analogy with the Lockerbie attack to make sense of how the US and UK authorities responded to the plot. His comments are worth quoting at length:

I was at Heathrow at the time of Lockerbie, you know, in the immediate aftermath of Lockerbie, apart from introducing tighter measures for passengers and cabin bags going through airports, there was next to nothing done against hold baggage, and if you looked at the methodology of the attack it was a device hidden in a hold bag … In fact, the Americans didn’t take seriously until 9/11, and when the International Civil Aviation Organization set 2006 as a deadline for all airports globally to have hold baggage screening, that was from 1988 to 2006 that some states lived with the risk of a bomb in a bag. If you then look at the liquids incident the UK banned liquids the next day. They didn’t take any risk whatsoever, and the European Commission followed in November, I think. That was August for the UK, November for the EU. *So the appetite for risk has completely changed.*

According to this expert, the case of the liquid bomb plot illustrates how new calculations of risk have emerged to govern terrorism after 9/11. His remarks echo Louise Amoore’s discussion of the former UK Prime Minister Tony Blair’s testimony before the Iraq Inquiry. Citing Blair, who claimed that “the crucial thing after September 11 was that the calculus of risk changed,” Amoore shows how, in a post-9/11 context, the actual presence of weapons of mass destruction became less important than speculation about any possible impact in the future. Or, as Blair put it, “they killed 3,000 people, but if they could have killed 30,000 they would have” (in: ibid, 24). Following the work of Amoore and others, it could be argued that the liquid bomb plot needs to be understood in a context in which more than risk, *uncertainty* captures what is at stake (Aradau and Van Munster, 2011). As Melinda Cooper (2008, 82) points out, the nature of today’s events is such “that we can never be sure how far gone we already are.” What we do know, however, is that when and if the event happens, “it will
be by surprise, abruptly, and on a scale that overwhelms all efforts at damage control” (ibid).

To emphasize, these threat representations should not be understood as proof of Ulrich Beck’s (1999: 4) “risk society” thesis: it is not strictly the case that we have seen the emergence of new risks. Rather, the point is that society has come to understand itself and its problems in terms of risk management, and, increasingly, in terms of risk avoidance (Éwald, 2002; see also Amoore and De Goede, 2008a). “Any level of risk is now considered unacceptable,” Aradau and Van Munster (2007, 103) argue in their analysis of the emergence of the precautionary principle in the war on terror. According to them, precautionary risk is a form of risk management that is oriented toward a “politics of zero risk,” where even the smallest chance of threat needs to be acted upon at the limits of knowledge (Aradau and Van Munster, 2007, 103). For the analysis of the liquid bomb plot, this means that it does not strictly matter that there were doubts about the plotters’ intentions, their capabilities, and the possible impact of the bomb they planned to build. What mattered, instead, was that there was always a chance that a comparable event could still occur, and that if it would, its impact would be great. It was on the basis of this logic that, even though the idea of a liquids’ ban had not been raised prior to the plot, the restrictions could be implemented in a solid and swift manner and without questions being asked about the costs and effectiveness of these measures.

Thus far, I have pointed out how the plot was mediated as a coherent and sophisticated threat, suggestive of a connection with global terrorism, post 9/11. Speculation over the plot’s potential, however, was not limited to the way in which the plot would have caused mass murder on a global scale. Apart from a massive loss of life, the attacks were believed to have global economic and political consequences, posing a threat to the broader network of air travel as well. The next section analyzes the liquid bomb plot against the backdrop of a second characteristic of catastrophic events identified in the introduction – that is, the idea that these are events that emerge from, and are amplified across the circulations and interconnections that make up contemporary, mobile forms of life. This section will also look at the new forms of technology, expertise, and modes of governing that are produced to constitute the airport as a secure seam space.
In the space of “the seam”

In her analysis of the security of maritime supply chains, Deborah Cowen (2010, 603) examines the way in which for logistics, “the territorial border can be a problem rather than a solution.” According to her, the maritime border has become the paradigmatic space for experimentation with smart border initiatives because of the imperative of circulation and trade for the sector of maritime logistics – to the extent that the disruption of trade becomes itself a security risk. For the purpose of this paper, what is key is Cowen’s argument that in an era in which security aims to monitor and speed up flows of trade, the border is altered from an end point to a critical zone of circulation. Following a phrase by US Army Lieutenant Colonel Thomas Goss in 2006, Cowen calls this new border space “the seam.” In this new zone, the maritime border exists as “a space in-between national territories,” transcending distinctions of inside-outside space (ibid, 604). This is also a space in which long established divisions between military and police force and crime and terror no longer hold. As Cowen points out, in the seam, “it is precisely the blurring of tactics and technologies that is needed in response to insecurity today” (ibid, 603).

Implicit in Cowen’s discussion is that, even if a source of vulnerability, circulation and mobility must be maintained for economic purposes. In his analysis of the security apparatus, Michel Foucault argues that the concern for security is not to “allow nothing to escape,” but, rather, “to let things happen” (Foucault, 2007, 45). While, for Foucault, disciplinary techniques of governing are about preventing events from happening, the problem of security is a different one. Namely, this is a problem which is about allowing “circulations to take place” (ibid, 65). In line with Foucault’s work, recent contributions from political geography and International Relations have examined these new forms of security, which seek to deal with crises while maintaining circulation. For example, a critical body of scholarship has demonstrated how investment in so-called smart border programs at airports relies on the premise that these have the capacity to integrate security and economic desires, and to filter bad intentions and the illegitimate, while remaining open to economically viable trade and circulation (Amoore, 2006; Bigo, 2006; Salter, 2008b, c; Johnson et al., 2011; Leese, 2014). These authors have monitored the introduction of new forms of border control at airports, such as biometric surveillance, trusted traveler programs, and other forms of passenger differentiation.
Cowen’s conceptualizations of the seam are, then, not just applicable to the maritime border. Following her work, I argue that, likewise, the airport should be seen as a “paradigmatic space for experimentation and reform precisely because of the magnitude of the challenge of ‘opening and closing’ access to trade [and passenger] flows” (Cowen, 2010, 603). According to Cowen, efforts to secure these flows should be understood in the context of a collective form of security, by Collier and Lakoff described as “vital systems security” (2015; see also Chapter 5). Crucial, here, is that “vital systems security has a geography that is network-based rather than national or territorial in form” (Cowen, 2010, 611). This means that these systems function by virtue of their connectivity, which is very much a global connectivity. Cowen writes, “although ‘systems’ offer rich insights on security … it is not just any system, but rather, global trade systems that play a pivotal role in the contemporary recasting of security” (ibid).

What the liquid bomb plot seemed to threaten was precisely this: a seamless and interconnected system of global airline movements and a mobile form of life. Whereas the plot caused chaos and disruption at airports worldwide in the immediate aftermath of the plotters’ arrest, at a later stage, it was the restrictions on liquids, aerosols, and gels that threatened to obstruct passenger circulation and throughput at the airport. More specifically, the liquid bomb plot was understood as a threat to the European system of air travel, and, as such, it required a coordinating role for the European Commission Directorate-General for Transport. After 11 September, EU member states agreed that the intergovernmental settings in the field of aviation security did not suffice and that EU involvement was needed to impose common security standards and ensure compliance. In the aftermath of the liquid bomb plot, the European Commission emphasized once again that it had an important role to play in coordinating a common European approach. In particular, Commission officials pointed out that the so-called one-stop-security principle that is in place for flights within the European Union required that there was common legislation with regard to the liquids’ ban. The one-stop-security principle implicates that passengers departing from any EU airport do not need to undergo further screening should they connect at another EU airport. It is supposed to “speed the flow of transit passengers and baggage to their ultimate destinations,” while eliminating the “need for redundant security checks at transit stops” (Airport Council International (ACI), 2009). What this means, in practice, is
that at every European airport the screening of liquid materials should be done according to common standards, in spite of different risk levels.

In the Regulation that imposed the liquids’ restrictions, the Commission recognized the obstructions posed by the restrictions on liquids, stating that “developments in screening technology should, in due course, provide solutions to these problems” (Commission of the European Communities, 2007b). The new screening devices, however, themselves created new problems. As the negotiations progressed and laboratory tests and trials exposed the new screening equipment’s weaknesses, European airports began to lobby to push back the initial 2010 deadline set by the Commission to lift the restrictions. Among other things, they pointed out that the existing technology was unable to screen high volumes of liquids, had generally low processing times, and could not be integrated into the limited space of the airport. The airports also raised questions about the high number of false-alarms that the technology was generating. These would require an additional round of screening and restrain passenger throughput even further, but they would also distract checkpoint staff from their primary tasks. As one security chief pointed out, “they are not going to be concentrating on looking for terrorists” (quoted in Clark, 2011). The Airports Council International (ACI) Europe, an industry group based in Brussels, representing the European airports, stressed that a removal of the ban could only be based on a sustainable technological solution that would detect a wide range of liquid explosives, but also maintain passenger circulation and facilitation. This should be a type of technology that would “enhance the passenger experience, rather than complicate it any further” (quoted in Airport Business, 2011).

In terms of equipment, four different types of screening machines are currently available for purchase. These range from a type of equipment that examines a sample of the liquid that is taken manually (type A), to a technology that screens each bottle individually (type B), and from a machine that detects a basket with a number of different bottles and tubes (type C), to one that screens liquids while they are kept in the hand luggage (type D). Confronted with the first phase of the phased-approach – allowing passengers to purchase duty free products over 100 ml outside Europe and to transfer through a European airport without having the item confiscated – most airports have opted for a type B technology, given that this type of equipment is relatively accurate and appropriate for the screening of a lim-
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ated number of bottles. Larger airports have chosen for a type C machine, allowing them to screen more bottles in a shorter amount of time. The type C technology will also be more suitable for when the Commission decides to increase the volumes of liquid bottles passing through the checkpoint as part of the second phase of the phased approach. It is most likely that when a new phase is adopted, airports that have thus far opted for the type B equipment will have no choice but to make new investments.

To date, the content of the second phase remains subject to a discussion about the material properties of the variety of liquids, aerosols, and gels that should be screened. While the European Commission has proposed to screen clear liquids in clear bottles, airports, airliners, and security manufacturers have raised interesting questions about what constitutes a “clear liquid” in “clear bottles.” According to Ken Mann, Vice-President Security Products at Cobalt Light Systems Limited and Chair of the European Organization for Security (EOS) working group on aviation security, the greatest difficulty in developing the detection equipment is related to the decisions being made on what constitutes a liquid in the first place: “Some of the challenges in screening liquids come from the fact that from a security point of view numerous items are considered liquids.” As Mann notes, “it quickly became apparent that, from a detection point of view, liquids also include aerosols, peanut butter, toothpaste, ice, and all manner of ointments and other things.” As a consequence, the algorithms developed by Cobalt Light Systems Limited had “to cope with a very wide range of materials in a very wide range of configurations.” Mann’s remarks show that the dangerousness of these materials is not self-evident. As Aradau and her colleagues (2014, 76) argue in their analysis of the liquid bomb plot and its implications for the study of discourse and materiality in security, the “dangerousness” of the liquid “is the effect of screening technologies and other instrumentation to detect the dangerous object.” At the same time, it emerges “through discourses of the threat of terrorism, surveillance and precautionary measures” (ibid, 62). More generally, this means that the materiality of the liquid “is a product of the co-constitutive relation between materiality and discourse: it is the product of both and neither one nor the other alone” (ibid).

Further still, the construction of the liquid as a security object is also the product of the difficult and ad-hoc process of developing, testing, and categorizing the screening technology. At the time of writing, the European Civil Aviation Conference (ECAC), an intergovernmental institution re-
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Responsible for harmonizing civil aviation procedures and equipment among EU member states, has tested and approved 85 different machines, a majority of them B and C types. However, as one official at a major European airport stressed in an interview, the problems with the technology are still manifold. He explained that during an unofficial set of trials at this airport with a type C technology in 2012, the equipment showed a particularly high number of false alarms. Among other things, juice boxes (containing aluminum wrappers) and almost all types of aerosols turned out to be difficult to screen. The same was true for relatively small bottles and containers, because these could not be stabilized in the accompanying trays. Furthermore, the equipment struggled to screen combinations of liquids if they were placed next to each other in the tray. In all these ways the liquid emerges as a suspicious object “out of the details of what apparatuses can measure and what not” (Aradau et al., 2014, 76).

During an interview with a senior official at Amsterdam Airport Schiphol, he stressed that the equipment is still far from operationally viable. Tests with simulated passengers showed that with the type C equipment throughput rates would decrease from two passengers per minute to one per minute. While the type D machines in principle promise less divesting and higher throughput rates, the processing times for this type of equipment are still relatively slow as well. At Amsterdam Airport Schiphol, where the authorities are currently carrying out tests with a type D technology, it further became clear that these machines are still quite large, heavy, and noisy, and, as such, difficult to integrate in the airport space (see figure 8).

At Schiphol Airport, these problems were amplified by the fact that security screening until very recently still took place at the gate. Since the 1970s, security screening has generally moved away from the gate to more centralized security ‘filters,’ allowing airport officials to make a distinction between “sterile” and “non-sterile” zones at the airport (see also Virilio, 1986). As argued by a number of scholars, this division of the airport space has enabled operators to centralize security screening in one site and to support and maximize retail opportunities in other parts of the airport (Adey, 2004; Lloyd, 2005; Salter, 2008c). While screening procedures have steadily intensified and the number of objects that need to be screened has increased, security at the gate seems no longer viable. At Schiphol Airport, a consequence of gate security was that passengers were asked to proceed for boarding well in advance, which restricted their ability to eat, shop, or...
spend money otherwise, and limits the airport’s revenues from retail and catering. Gate security also interfered with Schiphol’s ambition to remain an important international gateway between Asia, Africa, and North America since it increased transfer times. On top of this, the implementation of the one-stop-security principle meant that Schiphol needed to review its security concept in accordance with EU policy, which prescribes that transferring passengers travelling from a “clean” EU airport do not need to undergo additional screening as they have already been screened by equivalent procedures in their country of origin (Aviation Security International Magazine, 2013, 37).

In 2013, the airport’s owner, the Schiphol Group, launched a large-scale program of renovations, moving security screening away from the gates toward new and centralized security filters. Among other things, this
involved building separate, dedicated routes for transferring passengers that are screened according to EU standards (e.g. those passenger travelling from a country where Europe’s one-stop-security principle is in place), and passengers arriving from third countries. Their paths will run parallel, but on different levels. To make this possible, the Schiphol Group has been “building additional levels and false floors in Piers E, F and G, as well as 25 gate houses with stairways positioned between the gates and the aircraft to help navigate passengers along the correct route, depending on where they have arrived from.” Passengers travelling from an airport with a lower level of security are now directed to the new floor, and, in the case of transferring passengers, they are screened in the new transfer filters, after which they will be allowed into the “sterile area” (Aviation Security International Magazine, 2013, 37).

The new security scheme has been in place since 2015 and was announced by the Schiphol Group in a page-long advertorial in the main Dutch newspapers (see figure 9). Under the heading “Schiphol has central security. [Why] does that need to be in the newspaper?” Schiphol Airport promoted their new screening processes and security filters that “feel like a service.” Elsewhere, Schiphol explained that much attention has been paid to the “ambiance” of this filter: “the filter is more spacious than before, and special attention has been paid to the choice of materials used and the color setting.” All of this is “to ensure travelers an efficient and comfortable travelling experience through the airport.” The passenger, in this sense, is above all customer, and not a suspect (see figure 10). At the same time, as Peter Adey (2008, 439) suggests, the affective expressions of joy, expectation, and contentment that the airport terminal seeks to trigger – together with the fear and nervousness that we experience when we pass through the checkpoint – “may not be as distanced from power and control as we might think.” In particular, experimentation with the airport’s architectural design is aimed at encouraging passengers to conform with security regulations and to contribute, even if unconsciously, to a more cost-efficient security screening process (see also Allen, 2006; Massumi, 2002; Salter, 2003).

The way in which the discussions about the liquids’ ban are unfolding clearly demonstrates what is at stake for airport stakeholders. There is a continuous pressure on airports to intensify the flow of passengers moving through the space of the airport and the checkpoint. Airport operators have dealt with these problems, in part, by investing in new types of tech-
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technology and by outsourcing security screening services to private security companies (Berndtsson and Stern, 2011; Schouten, 2014). But, the problem of screening liquids also opened up to a broader set of questions about the effectiveness and sustainability of today’s checkpoint. And so, in the after-math of the liquid bomb plot, stakeholders such as the Schiphol Group, have begun to reflect upon the question of what a future checkpoint might look like. In particular, the industry has been raising the question of the appropriateness of screening objects versus the growing relevance of conducting a form of passenger differentiation, for example through “known,” or “trusted” traveler programs.

Below, three projects for a future checkpoint are analyzed: the Checkpoint of the Future, Smart Security, and Morpho Pass. I investigate these initiatives as relevant cases of problematizing the space of the checkpoint and I am thereby specifically interested in the ways in which they seek to combine security and passenger flow at the airport. Before examining these discussions in more detail, let us shortly return to the argument developed by Adey and his colleagues with respect to the 2010 Icelandic volcano eruption. We have seen how, for them, disruption is constituted by “an ‘environment’ of people, things, and technologies that amplified and cascaded the ash cloud’s eruption” (Adey, Anderson and Lobo Guerrero, 2011, 342). Likewise, in this section, I have demonstrated that what constituted the liquid bomb plot was an assemblage of human and non-human elements, including, but not limited to: the European system of air travel, the material properties of the variety of liquids, aerosols, and gels that should be screened, the ad-hoc process of developing liquid-explosives detection technology, and the limitations posed by the airport architecture. These elements, in combination with the discourses of terrorism, surveillance and precaution addressed in the previous section, made the liquid bomb plot an event that was “more than troublesome, threatening and disruptive” (ibid).

A seamless journey at the airport

Following the liquid bomb plot, a growing number of experts in aviation have started to question the industry’s focus on detecting and screening dangerous objects. In 2011, the International Air Transport Organization (IATA), an industry group representing more than 200 airlines, pointed out that the implementation of the new security regulations cost the airport industry $7.4bn per year. IATA’s director general, Tony Tyler said: “We spend
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Figure 9
“Schiphol has central security. [Why] does that need to be in the paper?” Advertorial published in NRC Handelsblad on 9 June 2015.
"Passenger is customer, not a suspect." News article on the new security filter at Schiphol published in NRC Handelsblad, 28 May 2015.
a huge amount of resources on screening of people who quite frankly do not need it” (quoted in Milmo, 2011). Tyler added:

We need to find a better way of doing it. Apart from the costs, we are putting our customers through an immensely complicated, and most of the time, unnecessary, hassle. And airports are creaking at the seams to find the space and capacity to deal with this (quoted in Milmo, 2011; emphasis added).

Other stakeholders have subscribed to this viewpoint, arguing that airports are reaching their limits to the extent that the checkpoint may well become the bottleneck for further growth in aviation. “So, we might be able to have additional planes flying,” one European Commission official told me, “but we would not be able to get the passengers there on time.”

To deal with these problems, the European Commission is currently studying alternative schemes for airport security in the ‘Agenda for the Future’ working group. Different avenues are explored, yet, there appears to be a growing consensus about the importance of introducing a more risk-based approach to security alongside the detection of objects. During a high-level conference on this topic, held in Brussels in September 2011, it was concluded that:

Security measures can and should relate to the risk they intend to mitigate… Inconvenient consequences for passengers and unnecessary burdens on trade can thus be avoided while keeping a high level of security focused on those areas where the threat and risk is highest.

As part of these discussions, a framework that has been singled out for further experimentation is that of known or trusted travelers. Already used in the US, trusted traveler programs introduce lower-security regimes for certain parts of the population, for example for children, people over 65, and for the military, as happens in the US. Another way this could be done is through a membership scheme, which would allow for less stringent checks on those considered low-risk passengers, provided they supply information, including frequent flyer details and travel records. Furthermore, passenger differentiation may take place on the basis of information about flight route
or type (business, tourism), or by association (screening entire flights or all passengers for a specific time period). Passengers may also be selected for supplementary screening “at random,” or based on past travel behavior and patterns in ticket purchase.\footnote{85}

Risk based screening is one element that is developed in the context of the former Checkpoint of the Future proposal put forward by IATA, now called Smart Security. IATA’s Checkpoint of the Future initiative starts from the premise that the majority of airline passengers presents a low risk to aviation and that the current one-size-fits-all approach is too rigid and predictable. IATA writes that “the principle of risk assessment is to objectively enable appropriate screening measures to be applied to passengers and to enable an efficient throughput, based on what is known or unknown about them” (IATA, nd.). In the original Checkpoint of the Future initiative, IATA proposed to differentiate between known, normal, and high-risk passengers, and to design the checkpoint accordingly so that the different categories would undergo different levels of screening. So, expected low risk passengers would be put on a fast track system, while other travelers would by their ticket get routed to the high risk zone, where they would be subject to enhanced screening procedures (Tegenlicht, 2014).

As those involved in these discussions recognize, the likelihood that initiatives such as these will come about in the near future is doubtful due to European data protection standards. Therefore, alternative ways of differentiating passengers are considered, for example in the context of the revised Checkpoint of the Future project, the Smart Security scheme. This joint program by ACI and IATA takes a broader approach to risk-based security, exploring how the use of new technologies and procedures could make the checkpoint at once “more unpredictable,” and “adaptable to an increasingly dynamic threat environment.”\footnote{84} In terms of technology, for example, one commentator involved in the development of the Smart Security program told me that it might be possible to “play around with algorithms so that people are actually subjected to a lesser level of security, but they are not aware of it.”\footnote{85} Moreover, it was suggested that equipment manufacturers are experimenting with new types of screening technologies, which will screen liquids, laptops, or metal items at a random basis. Other ways of incorporating unpredictability may involve passenger differentiation on the basis of random selection, behavioral analysis, or differentiation across
passenger groups or flights (something, which, it seems is already in place in the context of Europe’s one-stop-security principle). Smart Security is supposed to contribute to a screening system that is more pro-active and that is better able at deterring new types of terrorist attacks. Furthermore, through the implementation of state-of-the-art detection machines and new forms of lane design, it seeks to improve operational efficiency and passenger throughput. Smart Security envisions a seamless and “continuous journey from curb to airside, where passengers proceed through security with minimal inconvenience, where security resources are allocated based on risk, and where airport facilities can be optimized.” The project is also considering “smart lane design” initiatives to help passengers divest and repack more efficiently, including “ergonomic design features and aesthetics, automatic tray handling, and parallel loading procedures.” Smart lane design, a project brochure points out, “can also be an important element in keeping the X-ray occupied at all times and to minimize passenger flow constraints and the industrial look and feel of security.” This would, then, have “a positive effect on both the passenger experience and operational efficiency of the checkpoint” (see also Adey, 2008).

A third future checkpoint example is Morpho Pass border control system developed by Morpho, a high technology company in the Safran Group and a world leader in identification and biometrics. First demonstrated at the 2013 Paris Air Show, Morpho Pass is “an integrated airport security system,” consisting of three main parts: biometric identification, detection of illicit and dangerous substances, and an “integration layer,” which allows for the development of “an anonymous unique identifier” and a number of “flow management applications” to manage passenger progress and flow at the airport. Morpho Pass envisions passengers to travel through the space of the airport in an efficient and seamless manner, a journey that begins with the creation of a “temporary, secure, and biometric fingerprint.” This “virtual identifier” becomes associated with the passenger and her boarding pass and can be used to follow and optimize the passenger’s progress or path as she travels through the airport. It enables airport operators to direct the passenger to a specific security lane, or to ask passengers to not proceed through security during peak times, as such limiting the burden on the checkpoint. “So, basically” it was explained me, “you are being tracked in your security checkpoint process, and it is quite effective; you can really optimize the [throughput] time.”
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My interest in Morpho and Morpho Pass derives from the way in which it seeks to seamlessly combine biometrics and explosives detection. To develop a system that could do both, Morpho acquired another company in 2009, called GE Homeland Protection. GE Homeland Protection provides equipment and services for the protection of airports, ports, borders, and critical infrastructure, specializing in tomography-based technology for detecting explosives in checked baggage. Before the acquisition, the Safran Group had little exposure to the checkpoint. Hence, adding GE Homeland Protection was supposed to strengthen Safran’s position in the emerging homeland security market, a sector that is believed to make up twenty percent of the Group’s total revenues in the medium term. More specifically, Safran’s decision to acquire GE Homeland Protection was based on the idea that it would become possible and profitable to combine biometrics and explosives detection technology in the near future. Morpho’s acquisition strategy was, then, already informed by the concept of an integrated checkpoint for passenger identification.

Concretely, this concept implicates that as passengers move through the checkpoint, passport, boarding pass, and hand luggage will all be checked in one single passage. The virtual identity with which the passenger has come to be associated will be augmented with the information that is gathered during these screening processes. Furthermore, the X-ray technology that comes with Morpho Pass screens liquids and laptops without divesting. Morpho began developing this D-type machine for screening liquids inside the hand luggage after acquiring GE Homeland Protection. Whereas the company’s expertise was hold baggage screening, Morpho decided to pursue the development of liquid-explosives detection and hand luggage screening after a high-level meeting with the European Commission. In 2009, it became clear to the Commission that the first deadline for lifting the liquids’ ban in 2010 would come too soon, and so Commission officials arranged a meeting with the Safran Group to ask the company to develop a more innovative (type-D) form of technology. Safran, then, invested “a few million euros” in this enterprise with the aim of having the technology in place by April 2011.

This goal turned out to be too ambitious, not least because of airports’ opposition to the new technology. Security manufacturers in this domain have indeed complained that the aviation security market is a rather conventional market that is not hungry for new technologies, and if so,
only for cheap technologies. In recent years, they have begun to organize themselves in the European Organization for Security (EOS), a lobby organization for security equipment providers. Established in 2007, EOS has become very active in the newly emerging homeland security domain, currently representing over forty companies from thirteen different European countries. EOS’ main objective is to exchange best practices between industry members and European institutions and to contribute to “a harmonized European security market in line with political, societal and economic needs.” EOS publishes regularly on business opportunities in areas such as cybersecurity, border control, and critical infrastructure protection, and its Chief Executive Officer, Luigi Rebuffi, is a frequent speaker at European security events and roundtables. The relationships between EOS and certain branches of the European Commission are close. A case in point is the career of one European Commission officer, who left the Directorate-General for Justice, Freedom and Security for a sabbatical and started working as the Senior Vice President Government Relations at Smiths Group, one of the larger industry players in airport security. As part of his new job, the former Commission official became the chair of EOS’ specific working group on aviation security, acting on behalf of the manufacturing industry in the liquids’ ban discussions. He has recently rejoined the Commission in the Directorate-General for migration and asylum.

For EOS, the airports’ refusal to purchase the new liquid-explosives screening equipment was an important first test case, and, according to one speaker, it was for EOS that the equipment manufacturers were eventually able to develop a joint position and communicate a clear message to the airport operators about what the new technology was capable of and what it could not do. So, he claimed, from 2009 onwards:

They [EOS] started to engage a bit more with the stakeholders. And that really made a big difference, and I believe that the success now, well I am not sure whether we can call this a success, but we seem to be well prepared for next year [when phase 1 of the phased approach enters into force], is largely due to the fact that we now have EOS, which has managed to structure the input coming from manufacturers.
To sum up, the concept of the seam gives not only analytical purchase to the airport border as a zone of flows and circulation, but also to the ways in which this space is filled with reform and experimentation and new forms of expertise and technology. With airports “cracking at the seams,” new practices and innovations managing, upholding, and producing connections and circulations have been developed after the liquid bomb plot.

**Conclusion: governing the seam space**

This chapter explored two sets of questions. The first question asked how the liquid bomb plot was mediated as an event that exceeded traditional frameworks for risk assessment. Building on an analysis of media coverage and court cases, it was argued that the plot became understood as a coherent and sophisticated threat, suggestive of a connection with global terrorism, post 9/11. Moreover, the “eventness” of the plot was linked to a “changing appetite for risk,” to paraphrase one of my informants, or a precautionary form of risk management, as Aradau and Van Munster would have it, that is oriented toward the limitation or complete avoidance of possible risks. Speculation over the plot’s potential, however, was not limited to the way in which the plot would have caused mass murder on a global scale. Apart from a massive loss of life, the attacks were also believed to have global consequences for the broader network of air travel. Drawing on Cowen’s analysis of the maritime border as a seam space, the chapter examined how the liquid bomb plot threatened precisely this: a seamless and interconnected European system of airline movements and a mobile form of life. The concept of the seam was also adopted to address a second set of questions, concerned with the technologies, knowledge-forms, and modes of expertise that are developed to protect airports in the aftermath of the liquid bomb plot. The chapter analyzed three future checkpoint projects in the context of which technological innovations and new security procedures are imagined, developed, and tested. These were studied as projects around which capabilities and opportunities are identified, and relations across public-private expert networks take shape.

The analysis contributes to the existing literature in this field in two ways. First, following notions of “new materialism” that are now making their way into IR, this chapter offered a broad perspective on “the event,” explaining how the liquid bomb plot was not just an event that happened abruptly and by surprise, but how it was also constituted by an assemblage
of human and non-human elements (see e.g. Best and Walters, 2013; Bennett, 2005). Likewise, the securitization of liquids should not be taken for granted: this was the result of a “continuous process of assembling objects, subjects and practices” in airport security (Huysmans, 2011, 377). Accordingly, the event was not just a nice illustration or case study for understanding airport security today, but also a methodology: it was by studying the liquid bomb plot “in the middle of events” that I was able to place emphasis on the everyday activities, devices, and sites that actively shape securitizing processes (Barry, 2006, 244; see also Aradau et al., 2014).

Secondly, this chapter offers an attempt to explore current forms of security governing in Europe. Taking my cue from Foucault’s analysis of mechanisms of security and contemporary readings of Foucault’s work with regard to systems security, this is a form of governing that is concerned with fostering cross-border connections, integration, and seamless circulation. In airport security, a variety of actors embody these ideals and appeal to the value of connecting across sectors and sites. The result, as we have seen, is a complex policy environment in which industry groups and auditing and compliance bodies play an increasingly important role. “The government environment for any particular airport,” Salter (2008c, 15-16) also writes, is now “a combination of international treaties, national regulations and legislation, local bylaws, and management practices.” It is not just that new actors and relationships have emerged; more profoundly, we have seen the development of different new modes of governing to protect critical systems such as airports. These are characterized by best practices, the ad-hoc and contested development of technical standards and devices, (limited) participation in security expert groups, and logics of market integration. Many of these practices, standards, and devices are developed in informal expert networks and are often based on secret information. This does not make them de-politicized or uncontested per se, and the aim of this chapter has been to examine how these practices and governance-forms come about and with what effects.
Endnotes
68. See for instance Aradau and Van Munster, 2011.
69. Interview conducted 4 June 2013, Amsterdam.
70. Phone interview conducted 7 November 2013.
71. Phone interview conducted 7 November 2013.
72. Phone interview conducted 7 November 2013.
73. Phone interview conducted 7 May 2013, Brussels.
75. In this context, the concept of ‘the event’ relates more closely to Karen Barad’s point that events do not need to be spectacular (Barad, 2007: 227; Aradau et al. 2014: 75). While Barad argues that, similar to my own analysis, a discussion of events may reveal the complex interaction between different elements, material and non-material, for her, events are primarily everyday events. In this sense, the screening of a bottle of toothpaste may count as an example of an event.
77. Interview conducted 4 June 2013, Amsterdam. Simulated passengers were needed because it was not allowed to organize tests with real passengers.
78. See: http://www.schiphol.nl/Travellers/AtSchiphol/SchipholConstructsConvertsConnects/DepartureFilter1.htm (last accessed 13 April 2015).
79. See: http://www.schiphol.nl/Travellers/AtSchiphol/SchipholConstructsConvertsConnects/ExtraFloorOnTopOfPierEAndF.htm (last accessed 13 April 2015).
82. Interview conducted 7 November 2013.
83. Of course, we may ask ourselves, how random are these really? See e.g. Frowd and Leite (2013).
85. Phone interview conducted 7 November 2013.
86. Interviews with representatives European Commission, IATA, and ACI.
87. Of course, we may ask ourselves, how random are these really? See e.g. Frowd and Leite (2013).
89. See: http://www.schiphol.nl/Travellers/AtSchiphol/SchipholConstructsConvertsConnects/DepartureFilter1.htm (last accessed 13 April 2015).
91. Phone interview conducted 27 November 2013.
92. Phone interview conducted 27 November 2013.
94. Phone interview conducted 27 November 2013.
95. Phone interview conducted 27 November 2013.
96. Phone interview conducted 27 November 2013.
97. For example, Smiths Group, a big, UK-based manufacturer of airport screening equipment has seen annual revenue from its detection technology increase from £130m before 9/11 to £574m in 2010 (see Milmo, 2011).
100. Interview conducted 21 October 2013, Brussels.
101. Interview conducted 21 October 2013, Brussels.