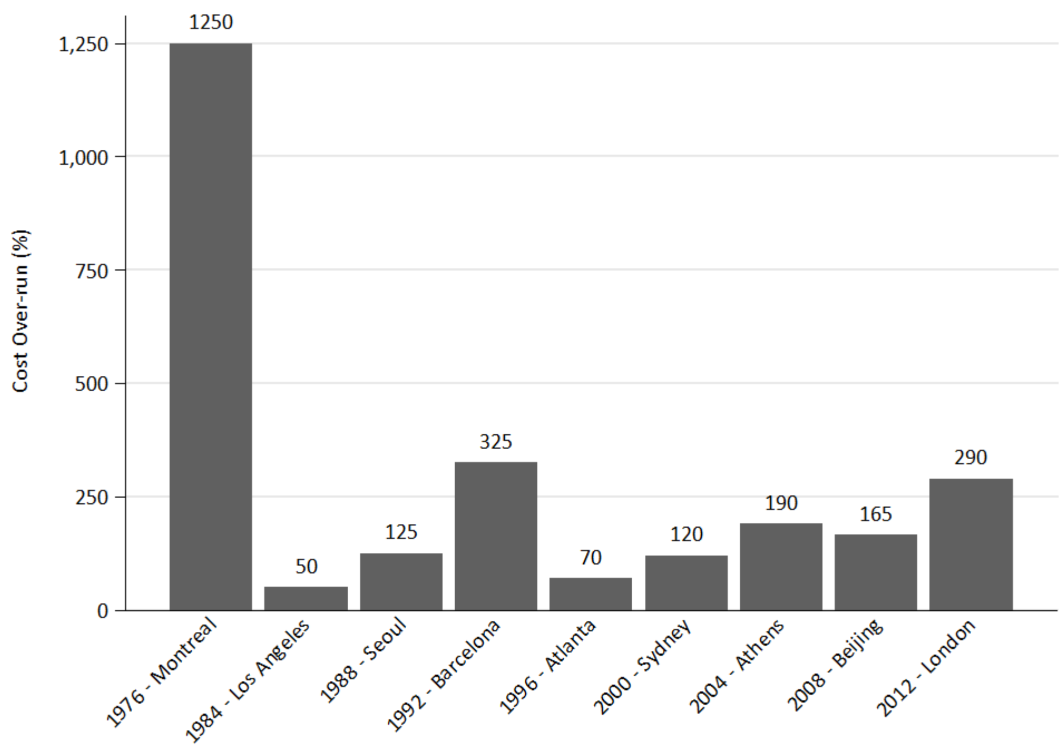
417). Such behaviour can stem from ideological or partisan agendas, or the weakness of institutions in constraining decision-makers. It can also stem from conflict between local and central politics, such as the interest of civic leaders with the securing of inward investment or the accrual of 'soft power'. This disregard of risk at the expense of adversarial politics, prestige and reputational benefits in the political adoption of mega-events is consistent with systematic bias towards the under-estimation of risk in planning and management of large-scale construction and infrastructure projects, 'mega-projects' that are integral to their staging. This is typically manifested in the form of cost over-runs, completion delays and shortfalls against revenue targets (e.g. Merrow 1988; Flyvbjerg et al. 2003). Such tendencies give rise to a 'performance paradox' (Flyvbjerg et al. 2003) where mega-projects are increasingly proposed and built despite their poor track records and resistance to attempts to measure and manage risk and uncertainty. The problem of 'optimism bias' (which refers to the systematic over-estimation of positive outcomes and the under-estimation of risk) is especially relevant in the context of the Olympics due to its reliance upon sizeable construction programmes and selection of the host city through a competitive bidding process which encourages ambitious plans and imposes a strict deadline on construction projects and event operations. Because of this, bids are often concerned with winning the votes of a majority of IOC delegates first and subjecting their assumptions to scrutiny later. Indeed, the bid documents submitted to the IOC have been called the 'most beautiful fiction' by former IOC Vice-President Richard Pound (cf. Luckes 1997: 1). The positive 'spin' of such planning documents tends, therefore, to institutionalise the under-estimation of out-turn costs, such that the strategic under-attention of bids to inadequacies (Luckes 1997: 14) itself is a source of risk.

While the fixed deadline for the readiness of venues and facilities puts a prohibitive political and reputational cost on late completion for planners, optimism bias is evident from recurrent problem of cost over-runs in governance of the Olympics. The difference between cost estimates in bid books submitted to the IOC and the final out-turn cost for each Olympics between 1976 and 2012 is shown in Figure 3 (note that official figures for the Moscow 1980 Olympics are not available). Over this period, the average cost over-run was equal to around 200%. This includes the infamous 1,250% over-run at the Montreal 1976 Olympics, which left the city government with a C$1 billion debt, contrasted with much more modest over-runs at the Los Angeles 1984 Olympics, widely reputed as a model of a profitable mega-event, and the Atlanta 1996 Olympics.

Further to over-optimistic tendencies that can be traced to decisions in high politics, there is often limited funding available to bid teams for technical evaluation or for detailed costing of proposals. This is not least because of the potential for financial investment in the candidature process to deliver no return whatsoever. As a result, this encourages reliance upon standardised templates and generic bids. In preparation of the London bid, for example, evaluations of previous successful bid *documents* (Luckes 1998) and the formulation of a 'specimen bid' (ARUP 2002) revealed the concern of decision-makers with the perception of the bid rather than a systematic assessment of risk. Such fictions are characteristic of Clarke's (1999) account of the

Figure 3. Rate of cost overruns for the Summer Olympics, 1976–2012



'fantasy documents' produced by organisations to express uncertainty in terms of risk and provide reassurance to outside audience. Indeed, bid documents are precisely a form of organisational rhetoric aimed at imposing order and controllability in the face of a large number of unknowns. As a consequence, the candidature process involved in the selection of mega-event locations is a major source of divergence between the initial cost projections and the final out-turn cost. What is perhaps most notable is that the recent under-estimations of financial risk have occurred despite technical assessments of costs and use of expenditure controls (e.g. Auditor-General of British Columbia 2003; National Audit Office 2007). In these instances cost over-runs occurred despite knowledge of the high likelihood of this in the context of mega-projects. Indeed, the bid budget for London 2012 did not adhere to the British government's own guidance on budgeting for major projects and specifically, its procedures for dealing with optimism bias (Public Accounts Committee 2008). In this regard, the tools of the 'new public management' (Hood 1991; Pollitt 1995) and the 'regulatory state' have failed to overcome the politicisation of decision-making (Moran 2001: 415).

Alongside this over-confidence in planning, mega-events are also susceptible to what Perrow (1984) calls 'normal accidents'. This arises due to the complex interdependence of infrastructure (such as transport networks and power supplies) and event operations (such as policing, emergency services and ticket controls and barriers). Seemingly innocuous incidents have potential to cascade through systems with unexpected and disproportionate effects. For example, a technical problem with the police dispatch system in Atlanta, which had not been updated with the new names given to Olympic venues, resulted in a ten-minute delay in the response time to a telephoned bomb threat because the operator was unable to override the system to dispatch a unit (Johnson 2008: 304–5). This minor, seemingly non-critical, feature of the 911 system therefore had unanticipated consequences, as Centennial Park had not been evacuated by the time the pipe bomb detonated. Such an incident helps illustrate the normal accident-type vulnerabilities of mega-events.

In addition to the unanticipated consequences of normal accidents, mega-events are vulnerable to 'emerging risks' (i.e. developing or changing risks that are not well understood but have potential to have a major impact) due to the extended duration of the bid, planning, organisation and decommissioning of the Olympics, which can sometimes last between 15 and 20 years. This creates a high degree of uncertainty for decision-makers in making forecasts about critical project details such as infrastructure costs, expected revenues and security threats. Errors in bid forecasting can occur either through incremental divergence from initial conditions (such as slow inflation in costs) or through sudden shocks that require the complete adjustment of planning assumptions (such as terrorist incidents or economic crises). For example, since exploratory studies into a London bid (cf. Luckes 1997, 1998; British Olympic Association 2000), the broader risk environment of the Games has undergone a series of fundamental transformations – with the escalation of some risks and others in relative decline. The threat of terrorism to the London 2012 Olympics changed with the events of September 11, 2001 and July 7, 2005 highlighting the threat from Al-Qaeda and extremist Islamic groups, while the threat of Irish republicanism on the British mainland (Luckes 1997: 15) has declined since the 1998 Good Friday Agreement due to the success of the Northern Ireland peace process. Most prominently, while proposals for the event were developed during a period of economic growth, the events of the global financial crisis have impacted upon public finances and investment from the private sector as well as having potential implications for revenue from ticket sales and sponsorship. While emergent societal risks of this sort are general in their origin, mega-events are especially exposed because of the long time horizon of planning. In juxtaposition to this, planning tends to be compressed in time due to the immovable deadline of mega-events. This means that there is low tolerance of failure or delays, which imposes additional costs to transfer and mitigate risks. In Olympic planning, event postponement is politically 'not an option', but means project non-completion would have a catastrophic impact and is therefore prioritised above all else. Concerns over the readiness of facilities ahead of the Athens 2004 Olympics demonstrate the reputational risks associated with project completion as well as the poor safety record in stadium construction that was linked to the race against the clock to finish projects on time (Howden et al. 2004). It therefore follows that the time pressures of mega-events, and mega-projects to a lesser extent, can be linked to increased likelihood of industrial accidents.

Although it might be argued that the risks that afflict mega-events are just everyday risks *writ large*, their governance is associated with a particular set of organisational biases and pathologies of over-optimism, normal accidents, extended planning horizons and time compression, all of which have consequences for the predictability and manageability of risk.

Mega-events and risk colonisation: risk management and the Olympics

While mega-events are often resistant to attempts to measure and manage risk, their production of societal and institutional risk bring simultaneous pressures for safety and control. The growing influence of risk as an object of decision-making in the governance of mega-events must, however, be put in the context of a much wider 'qualitative shift towards the management of institutional risks' (Rothstein et al. 2006: 92). That shift is encapsulated in a number of overlapping trends across public and private sector organisations, such as the 'explosion' of the use of audit to measure organisational performance (e.g. Power 1997), the historical turn towards regulation and standard-setting as a mode of governing (cf. Moran 2002; Hood et al. 2001), and the rise of the risk industry and ubiquity of the tools of risk management within organisations (e.g. Power 2004). Together, these point towards the increasing importance of institutions' attempts to manage threats to their performance and their legitimacy and reputations. In light of the mega-risks that confront mega-events this is an organisational setting in which one would expect to observe similar institutional attention to risk, as well as discourse about risk that leads objects to be framed or reinvented as 'risks' rather than with reference to other organisational categories (cf. Power 2004; Rothstein et al. 2006). One might also expect to see the emergence of a professional community of mega-event risk managers and consultants, diffusing knowledge and practices across events. In the context of mega-event planning and management, then, institutions are highly attuned to risk given the potential for blame when things go wrong.

The emergence of risk management in the Olympic context is, therefore, an important case for assessing the extent to which there has been a similar shift towards the management of institutional risks in the governance of mega-events and the degree to which institutional forms and the language of risk has been replicated across events and over time (e.g. Jennings and Lodge 2011). In the analysis that follows the 'rise of risk management' and the spread of notions of risk and uncertainty in governance of the Olympics are outlined. The method of analysis is based on a combination of reference to official documentation and interviews with risk practitioners involved in the organisation of a number of recent Olympic Games. The increased influence of risk within Olympic-related organisations is examined in the form of development of the formal bureaucratic apparatus of risk management, such as the creation of risk management units within organising committees and in the wider spread of the language of risk as a means of internal control and communication.

The Olympics and risk management

While the 'formal' management of risk has become institutionalised in the Olympic context since the 1980s, organisational attempts to manage risk have taken numerous forms far predating this. One of the earlier methods was the purchase of insurance against property and personal injury by organising committees (first documented in the Paris 1900 Olympics), and was of then especial importance due to the modest scale of commercial revenues and the absence of financial guarantees from host governments. This focus has shifted somewhat since the 1980s due at least in part to financial risks associated with exponential growth in revenue from the sale of broadcasting rights to major networks. The OCOG for the Sarajevo 1984 Winter Olympics was the first to take out insurance against the risk of cancellation to revenues from the sale of broadcast rights (Sarajevo '84 1984: 161–2) with the approach replicated in the purchase of coverage in the region of between US$100 million and $200 million for Calgary 1988, Barcelona 1992, Lillehammer 1994, Atlanta 1996, Nagano 1998, and Salt Lake City 2002. Despite much media fanfare when the IOC took out insurance cover against cancellation of the Athens 2004 Olympics in the recent aftermath of the September 11 attacks (e.g. Veysey 2004), then this fell within a broader systematic pattern of risk management via the tool of insurance.

The wider shift towards the formal management of institutional risk that has occurred in the Olympic context since the 1980s is consistent with the 'colonising' influence of risk as an object of regulation and of internal management and control. This might be precisely dated to 1982, in the creation of a specialist risk management sub-committee within the organising committee (OCO '88) for the Calgary 1988 Winter Olympics (cf. Chang and Singh 1988). Prior to this there is no evidence of dedicated units within Olympic-related organisations with a remit of risk management. Breaking new ground, Calgary's committee was responsible for developing a risk management programme aimed at the reduction or elimination of potential losses and liabilities, and this was managed through the conventional process of threat and hazard assessment, prior to the development of risk financing and loss control programmes. Statistical data on losses were also recorded and analysed through loss reports (Chang and Singh 1988: 51). During this developmental period, risk management was tied to the pre-existing organisational focus on insurance (risk financing). This situation of risk management within the insurance division of the host OCOG was replicated at the Albertville 1992 Winter Olympics and the Barcelona 1992 Olympics (COJO 1992: 228; COOB'92 1992: vol. 2: 79). It was only at the Atlanta 1996 Olympics, that risk management acquired a more holistic scope and meaning. For this reason, one former US Olympic Committee official considers it to have been 'the first Games built with a risk management infrastructure'.[1] This approach was replicated in the risk management programme developed for the next Olympics in Sydney (cf. SOCOG 2001: 271), exhibiting some 'institutional isomorphism' (cf. DiMaggio and Powell 1983) assisted through the movement of staff between organising committees. Even more comprehensive risk management systems have been implemented ahead of the Beijing 2008 Olympics, the Vancouver 2010 Winter Olympics and the London 2012 Olympics. For Beijing, risk management was integrated as part of the management of construction projects (cf. Loosemore 2007), and similarly risk management of London's construction programme was undertaken by the Olympic Delivery

[1] Interview with David Mair, Risk Manager for the US Olympic Committee and for the Atlanta 1996 Olympics.

Authority in collaboration with its delivery partner CLM (cf. ODA 2008: 67; Newman 2012).[2] Vancouver's organising committee (VANOC), implemented the 'Enterprise Risk Management' (ERM) framework, which consolidated its management of financial and operational risks – first prioritising construction risks, before looking at operational risks nearer to the event.[3] This trend of a shift towards the institutional management of risk in Olympic organising committees is summarised in Table 2. While the integration of risk management within organisational hierarchies has deepened over time, the similarities across institutions suggest considerable standardisation of organisational forms (i.e. with activities defined according to the generic categories of risk identification and risk assessment, risk transfer or insurance, loss control and contingency planning). In this regard, risk management has become a standardising notion that seeks to impose order on underlying complexity and diversity in mega-event organisation.

Further to the creation of risk management capacities *within* organizing committees, 'risk' has also become an object of governance in a broader sense at recent Olympic Games. For Vancouver, risk registers were maintained by the Olympics secretariats of the provincial and federal governments as managerial devices to track and manage issues and risks within their strategic responsibilities for the event. London's Government Olympic Executive maintains a similar register of programme risks, using general information from reports on threats and hazards to the UK (such as the Cabinet Office's *National Risk Register*) as well as Olympic-specific information compiled from the risk registers and risk logs of external bodies such as the Olympic Delivery Authority and the Metropolitan Police's Olympic Security Directorate. These sorts of governance arrangements are perhaps more revealing of the management of project and operational risks conducted at the level of the individual organisation – and their implementation of bespoke strategies for management of risk – since these devices reflect the growing influence of 'risk' as an object in strategic decision-making and in the categorisation of some aspects of event organisation. It informs, for example, the evaluation of risk and value-for-money in the Olympic Security Directorate's assurance of security projects competing for internal funding.[4]

In this regard, organisational objectives and performance can be framed in the language of risk, leading to certain sorts of institutional response and contributing to the 'colonising' influence of risks. The promotion of organisational rhetoric concerning risk can also be rather more democratic in nature. In both Vancouver and London, officials stressed the importance of nurturing a 'culture of risk management', facilitated through the bottom-up development of risk registers and the promotion of 'proactive thinking' in lower tiers of their organisation.[5] The application of risk management across large sections of London's Olympic programme, for risk practitioners at least, appears to have contributed to the creation of a shared language,

[2] Interview with ODA risk manager.
[3] Interview with risk manager, VANOC.
[4] Interview with security official, Olympic Security Directorate/Her Majesty's Inspectorate of Constabulary.
[5] Interviews with risk managers for VANOC, the ODA and the Government Olympic Executive.

Table 2. Risk management by Olympic Organizing Committees 1988–2012

Olympiad		Institutional Management of Risk
1988	Calgary	Risk Management Committee responsible for the identification, analysis and mitigation of risk: focused on exposures relating to people, public and property. Maintained a central record of losses, undertook risk assessments and managed risk through risk financing (insurance) and loss control (hazard assessment, safety training, contingency planning).
1992	Albertville	Risk management conducted within the insurance department of the organising committee, focused on management of insurable risks. Processes built on risk assessment, risk minimisation (and mitigation) and risk transfer through insurance.
1992	Barcelona	Development of a risk management plan contracted out to an external consultant, with the risk management plan organised around risk assessment, mitigation and transfer.
1994	Lillehammer	No formal division focused on risk management within the organising committee, exposure to risk dealt with in terms of insurance against financial liabilities.
1996	Atlanta	Separate risk management division tasked with risk assessment, risk transfer (i.e. insurance), risk mitigation (loss control, e.g. safety training and compliance monitoring), and risk administration (i.e. records management).
2000	Sydney	Risk management programme developed under the Finance Division of the organising committee undertook risk assessment and analysis, risk transfer (insurance), and mitigation (contingency and safety planning).
2002	Salt Lake City	Separate risk management division within the organising committee responsible for management of financial risks, undertaken through development of a comprehensive insurance programme and liaison with external partners to develop loss controls (e.g. venue owners, state government).
2004	Athens	Risk management section created under the Financial Services division of the Athens organising committee, responsible for insurance and, health and safety, and contingency planning.
2006	Turin	Risk management function of the organising committee was responsible for risk assessment, design of insurance cover, loss controls, and safety programmes.
2008	Beijing	Risk management conducted under the Project Management division of the organising committee, taking the form of risk identification, development of a risk management system (ROMS) to map risks to procurement, and loss control (e.g. safety inspections and emergency planning).
2010	Vancouver	Risk management was consolidated within the organising committee, implementing the *Enterprise Risk Management* standard through a 'top-down' mandate, encompassing risk assessments, audit and assurance, risk transfer and mitigation, and loss controls (e.g. contingency planning).
2012	London	Risk management conducted under the Risk Committee of the organising committee (with support from external consultants, Deloitte & Touche and KPMG), implementing a risk management framework for the identification of risks and conducting regular risk assurance (i.e. internal audit) (cf. LOCOG 2009: 37). Management of procurement risks also undertaken through the ODA which maintains a risk management system combined with audit and assurance functions.

or a ‘boundary object’ (Power 2004: 34; also see Bowker and Star 2000), enabling communication or coordination between organisations with discrete functions and professionals from different communities of practice (such as interactions between agencies concerned with programme-level risk, operational risk and business risks).[6]

The colonising influence of risk can also be seen outside the activities of organising committees and host governments in wider patterns of governance of the Olympics movement and in particular in the evaluation of the bids and preparations of host cities. For instance, the *IOC candidature procedure and questionnaire* (IOC 2004) requires bids to host the Games to present their plans in a standardised template, evaluated through assessments of the IOC Evaluation Commission. The IOC candidature process for the 2012 Games was an explicit exercise in risk assessment, with the IOC Evaluation Commission describing its mission as ‘a technical and fact-finding one: to verify the information stated in the candidature file, to determine whether proposed plans are feasible and to make a qualitative assessment of risk’ (IOC 2004: 5). To assess bids, the IOC uses ‘fuzzy set’ methods that adjust for *uncertainty* attached to their qualitative scoring of the various assessment criteria (such as infrastructure, environmental conditions and impact, transport concept and finance). Further, risk is inter-linked with institutional attempts at regulation. After the candidature phase, the monitoring of host city preparations is conducted on a regular basis by the IOC Coordination Commission – with its inspection visits providing opportunities to identify risks in project management and operations. Such inspections can highlight areas of concern, such as was the case with the readiness of venues for the Athens 2000 Olympics, or generate more positive reports of progress, such as has been the case for London (e.g. Gibson 2009). For the IOC, oversight processes are an essential instrument of management of organisational and operational risk, which at the same time have the potential to further generate discourse over ‘risk’, ‘readiness’ and ‘resilience’ of Olympic planning.

Risk colonisation and mega-events

The governance of mega-events such as the Olympics now occurs in an age in which states and societies are increasingly organised in response to risk. Risk and its management is, in turn, an indelible feature of governance of these large-scale, complex and often spectacular enterprises. The inherent scale and complexity of mega-events, and the mega-projects that are often attached to them, make them an extreme setting for the manufacture of societal and institutional risk. In this regard, the growing operational size, financial success and cultural and economic globalisation of the Olympics had meant that the potential impact (i.e. losses) of hazards and threats has multiplied. Further to this, mega-events are a venue for broader societal process of the anticipation of risks and catastrophe (cf. Beck 2006), as settings in which attention to hazards and threats is accentuated and reinforced through the attempts of institutions to communicate and mitigate risks. At the same

[6] Interviews with officials from the Cabinet Office and the Department for Culture, Media and Sport, the ODA and Association of Chief Police Officers.

time, the global ‘mega’ status of the Olympics has on occasion led its experiences to feedback into much wider societal and institutional relationships with risk, for example in its influence over perception of the threat of international terrorism and its normalisation of risk-intolerant responses to security threats. Alongside this, it is clear that mega-events such as the Olympics are vulnerable to particular organisational pathologies and biases that further render the institutional management of risk problematic. The over-optimism of planners and the time compression of project management (due to the fixed completion deadline of projects for the event) make risks less controllable than is normal, in a context in which there is, perversely, pressure for the elimination of risk.

Most significantly, the governance of mega-events is susceptible to broader trends in contemporary governance that suggest a shift towards the management of institutional risk. This is to be expected in the mega-event context given the mega-risks that confront planners and organisers. In the Olympics’ context this has been observed in the shift from insurance to integration of risk management within organising committees, while ‘risk’ has become an object of governance in a broader sense, such as in the IOC’s evaluation of applicant cities and its monitoring of host city preparations. As such, while the heightened attention to risk and its formal management in governance of the Olympics suggests a pattern that might be observed across similar mega-events, it is also consistent with far broader changes in government and business. More widely, the inexorable growth of the modern Games and Olympics movement offers a fine example of adaption and evolution of a system of governance in response to risk – having survived political, financial, security, operational and reputational crises over the course of its history (cf. Payne 2006: 5–12). This also illustrates how the manufacture of risk is a potential side-effect of success and the organisational growth of such a mega-event.

From the interaction of these various trends, there is some evidence of the notion of ‘risk colonisation’ (cf. Rothstein et al. 2006), as the production of societal and institutional risk has in turn come to shape organisational behaviour (in particular the emergence of risk management as a practice, and its diffusion across events and over time) as well as redefining the language of event planning and organisation in terms of risk. Despite the colonising power of risk as an object of management and governance, its shaping of new practices and definitions cannot guarantee that a given mega-event will pass without serious incident, just as the security plans prepared for international terrorism for the Atlanta 1996 Olympics failed to prevent an attack by a lone domestic bomber (Clarke 2004: 109). In this regard, the shift towards the institutional management of risk might be linked to expectations of safety and security, as well as to the potential for eternal disappointment.

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