



Fixed links and the engagement of islandness: reviewing the impact of the Confederation Bridge

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Islands are the challenging targets of a global pursuit in the closing of gaps, their distinct geography so far having seemingly eluded and mocked both human ingenuity and terra firma. This article seeks to deconstruct the concept of the bridge as more than just a value-free symbol of inexorable technological progress, and uses islands as the reference point to flesh out such an argument. Bridges impact on the subtle balance between the characteristic 'local-global' nature of an island identity; such an impact is multi-faceted, complex and case-specific. These ideas are applied to the specific case of the Confederation Bridge, the 14-km structure linking Prince Edward Island to New Brunswick, and which celebrated its tenth anniversary in June 2007.

Les liens fixes et l'engagement de l'insularité: bilan de l'impact du Pont de la Confédération

Les îles sont les objectifs ambitieux d'une quête à l'échelle mondiale visant à combler tous les vides. Leur géographie distincte leur a permis jusqu'à ce jour d'échapper et se moquer de l'ingénuité humaine et de la terre ferme. Cet article propose une déconstruction du concept du pont au-delà du symbole neutre associé au progrès technologique, et prend les îles comme point de référence pour reposer un tel argument. Les ponts ont des incidences sur l'équilibre subtil entre le caractère 'local' et 'global' de l'identité insulaire. L'impact se ressent à multiples niveaux, est complexe et dépend de chaque cas particulier. Ces idées sont appliquées au cas du Pont de la Confédération, qui est une structure de 14 km reliant l'Île-du-Prince-Édouard au Nouveau-Brunswick, et qui fête son dixième anniversaire en juin 2007.

Introduction: A Contentious Affair

Valentia is a small island off County Kerry, on the southwest coast of Ireland. A recent count for the island's permanent population is around 650. A ferry operates daily from 1 April to 30 September. However, should you visit outside this period, there is a bridge (the longest opening span bridge in Ireland). One may thus be pleased to note that all-season access to/from Valentia is available. Yet, bridge technology can also arouse passionate responses:

There are some who have swapped their birthright
for a stretch of tar.
A bridge that will allow their cars
to link with roads
that lace mainlanders together,
permitting islands to become
like a landlocked place.
Surrendering their separateness
to loop with these larger shores,
becoming both part
and prisoners of the whole.

Bridge to Valentia,
by Donald S. Murray (Murray 2003)

A bridge, a stretch of tar, is a contentious subject, especially for islands and islanders. Murray (2003) does not mince his words: the convenience of the bridge is obtained at too high a price, since it irrevocably transforms otherwise whole islands into mere parts, fractions of mainlands. Thus, the island not only loses its geographically, historically and culturally defining islandness; it also becomes a small and insignificant appendage of, and therefore hostage to, a much larger whole, for which the island is but a nondescript peninsula or *cul-de-sac*. The technology of the automobile conspires with that of the bridge in transforming local identities, and in privileging mobility above place. The outcome is one other example of 'space-time compression' (Harvey 1990, after Janelle 1969); 'the end of geography' (Virilio 1997, 17) and of a move towards a 'zero-friction society' (Flyvbjerg *et al.* 2003, 2).

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ance between the characteristic 'local-global' nature of an island identity; such an impact is multi-faceted, complex and case-specific.

Separated or Apart?

Social scientist Georg Simmel (1994, 10) observed that a human being is 'a connecting creature who must always separate and cannot connect without separating'. In connecting two objects, we simultaneously acknowledge and underscore what separates them; in separating two objects, we underline their connectedness. Thus, as Simmel argued, in the act of bridging two items, we actually underline their distinctiveness. Insularity and connectedness are but two sides of the same coin, their meanings forever entangled (Gillis 2004, 147).

Moreover, Simmel observes (1994, 6) that it is only human beings who differentiate between two objects—say, the opposite banks of a river—as either being apart or else as being separated. 'Apartness' is static, a non-relational statement of fact; in contrast, 'separation' is a dynamic condition that betrays a need for, or interest in, connection. Castells (Susser 2002, 359) goes further. He reminds us that apartness and separation are predicated on two different spatial logics. Apartness concerns locale-specific but scattered, segmented places, unrelated to each other, unable to share codes; their occupants proud in their defiant expressions of difference, of nationalism, of defining fundamentalism. Churches, resource-based communities (like hunting, fishing, mining) and monoethnic nations (like Iceland or Portugal) could be such places apart. In contrast, separateness concerns a networked and a-historical 'space of flows' (after Castells) or 'spaces of pause' (after Deleuze 1989): 'non-places' that exist as conduits, as sites of diverse people in transit. Escalators, streets, stations, airports, institutions, workplaces—as well as bridges, tunnels and causeways—could constitute such indeterminate spaces.

A bridge thus symbolizes either the connection between what is separated; and the separation between what is connected (van Houtum and Strüver 2002, 145); but would be next to meaningless to two locations, which are merely apart. This observation is important because it presumes that a bridge or some other 'fixed link'



is merely a next, and not the first, technological step in the evolution of the connectedness of two places. As my ancient English dictionary tells me (Webster's 1942, 126), a 'bridge' is a structure erected over an *obstacle*, and not just in and over uncompromised space. Bridges make sense in progressively reinforcing connections, in improving communications, but not in summarily establishing them.

Semiotics and Graphology

Such a nuance is not self-revealing. The metaphoric diversity in which the word bridge is nowadays used—in such phrases as 'building bridges'; 'not burning one's bridges'; or 'bridging the gap'—belies nevertheless a deeper commonality: the message is consistently and clearly in favour of either establishing or improving access by means of the bridge, without discriminating between one and the other. The difference, though subtle, is fundamental. One must not assume that any two places, any two people, are necessarily separated if they are apart. There is no inherent benefit, nor any obligation, in imposing connectivities. I will return to this idea later on.

The choice of stylized bridges to grace the obverse of the euro notes—now the currency of 400 million Europeans—should therefore not surprise us. The European Union is a grand project of connectivity (and therefore of separateness) but also of apartness. While there are strong movements in favour of a deepening and widening of European-wide initiatives, as is the very notion of a single European currency, the European Union remains at the same time a platform for the advancement, protection or trading of stubbornly national interests—and more evidently so with the stalling of the ratification of the European Constitution. The bridges epitomize the concept of the single market, of 'building Europe' (Sidaway 2001, 743); yet they remind us of the separate unities ('nation-states?') that make the bridge and its bridging functions necessary. A bridge quintessentially speaks to a confederate polity, with multiple levels or layers of identity. In fact, while the euro notes are the same everywhere, the euro coins portray the national monuments and persons of each member state (Houtum and Strüver 2002, 145).

How then do islands, in particular, become platforms of contestation in the 'great war of independence from space' (Bauman 1998)?

Rooted Identity, Nested Mobility

Islands suggest separation and aloofness; but, as Beer (2003, 33) reminds us, once islands are regularly inhabited, they are never enclosures only: they are crossroads, markets for exchange and open to the sea (King and Connell 1999). No island is insular, meaning 'entire unto itself': Donne (1624) got it all wrong in his oft-quoted statement. The fallacy recurs today among such eminent gurus as competition strategist Michael Porter who uses the term 'insular' to describe nations, which grow complacent, arrogant and inward looking in relation to the urge to remain competitive (Porter 1990, 171). Islands are connected to continents. Islands are part of the main. Islands are separated but rarely apart, and then only in an incestuous and unsustainable way. It is rather the mainland view of the sea as dark and sinister (and therefore an obstacle) which is suspect and questionable. When an island is completely isolated, a world apart, it has no life, no present and no future: the tragic history of Easter Island is all about the non-viability of isolation (Bahn and Flenley 1992; Diamond 2005). Islands aren't really insular (Gosden and Pavlides 1994).

Thus, the topos of an island appropriately conveys the complex relations between a given identity and the estrangement from this same identity (Bongie 1998, 18). In its double identity of openness and closure, an island is on one hand rooted in tradition, isolation, culture and history; a place of refuge, engulfed in claustrophobia whose only escape is exile (*ex-isle*). Still, at the same time, the island is well routed and connected to the world beyond via trade, migration, tourism, and biotic, cultural and material imports. Without these, the island and the life forms it bears, simply wouldn't survive (Clifford 1997; Baldacchino 2004). While an island's geography speaks severance, its history speaks contact, argue Warrington and Milne (2007). Much islander nervousness can be traced to this inescapable, difficult-to-admit dependency on an invisible but very real mainland. Islanders, even the most ardent champions of locality, must reconcile themselves to bearing 'glocal'

identities (after Robertson 1995; also Courchene 1995).

Technology, improved mobility and ease of communication have led to a steady explosion in the manner, and variety, in which places are routed, and therefore less separate. One improvement in connection leads to another. A bridge is just one notch on a broad continuum, with a cycle of slow but steady technological and transportation advances, each also pushed forward by slow but steady popular requests and expectations. As Royle (2001, 113) notes:

Islanders throughout the world press for better and improved transport systems. Inishbiggle islanders in County Mayo, Ireland, who are connected to their neighbouring large island of Achill only by a *curraugh* (a traditional small open boat) which carries the post, want a cable car. Residents of Dursley Island, which has a cable car, want a bridge; people on Achill Island, who have a bridge, would like a railway.

Islands and bridges share this essence of rooted identity plus nested mobility. This is also why they do not necessarily get along well together. Proposals for bridging islands to mainlands are particularly controversial. Islanders are some of the most vociferous critics to the building of bridges or other fixed links that would unite them permanently to mainlands. A bridge has the awesome power to remove once and for all the basis of the ambivalence, which lies at the core of island identity. While openness is strengthened and enhanced by a fixed link, closure is prejudiced and can be lost; forever. A bridge nervously compromises that always-delicate balance.

The question of whether or not such a [fixed link] investment should be made is often a controversial one and the greater the financial, economic and environmental issues at stake, the greater the passions aroused (CPMR 2002, 25).

Islanders are uncomfortable with projects that radically challenge their island identity. Some of the reasons are psychological, resulting from the collapse of the geographical finiteness and 'crucial self-containment' (Crumley 1994, 11) that gives islands, and islanders, their unique identity and character. It has been argued that 'an artificial land link removes the perfection of

the island' (Baum 1997, 24). Other reasons are grounded in material evidence, as the 'island-mainland' fixed link tends to lead to a particular chain of developments.

Islands on One's Mind

Islands appear in the western imagination and literature very much as they might appear to a traveler: over a horizon, and not always in ideal conditions. In Shakespeare's *The Tempest*, the characters are transported to the island home of Caliban in a storm; the protagonists of *Gulliver's Travels*, *Swiss Family Robinson*, *Robinson Crusoe* or *Mysterious Island*—Swift (1965); Wyss (1999); Defoe (1980) and Verne (1965) respectively—and modern Hollywood castaway Tom Hanks are similarly unceremoniously deposited. The island then becomes an unwitting platform for the unfolding of a drama that often belies a colonial reenactment, much of which has to do with human control over nature; rationality over disorder, cosmos over chaos (Loxley 1990) a green imperialism (Grove 1995); or is it the other way round, chaos over cosmos, as in *Lord of the Flies* (Golding 1954)? In any case, mission accomplished, the actors typically move (or are moved) back to their respective mainland, like so many Big Brother contestants or sun-worshipping tourists, and the island slips back beyond the horizon and into what is, at best, a distant memory. The island experience is packaged, surreptitiously framed by the journey to and fro. It is not meant to be part of the here and now, but of the there and then, an elusiveness of space and time that is part of the island's alleged and conjured store of mysteries, marvels and monstrosities (Cosgrove 2003, 91).

Of course, these are mainland views of islands, and islanders would certainly beg to differ. To them, the island is their home, their base, their 'here and now', so much so that the mainlander's transient paradise could be the islander's permanent prison; the mainland becomes a dominant source of imports, investment, ideas, employment, education and thrilling escape. The smaller the island, and the closer its mainland looms, then one would expect a general tightening of the mainland's grip on island life and on the islanders' psyche.



Within this inevitable yet uncomfortable 'love-hate' contest, the surrounding sea, the very isolation of an island, lies at the heart of its 'lure' or 'fascination' to visitors (e.g., Baum 1997; Lockhart 1997), while also affording some, even if tokenistic, sense of protection to those who live there. Islanders know that they stand a better chance in avoiding invaders—be they human (like armies or pirates) or environmental (like hurricanes or cyclones) or viral (like epidemics) than in actually resisting them (e.g., Cliff *et al.* 2000). Once invaders arrive or land on an island, history tells us that they usually accomplish what they set out to do: that is, conquest (Royle 2001, 58); they also do so in typically faster, deeper and more thorough ways (Bowen-Jones 1972, 59). Do bridges presage such a reversal of fortunes; are they the harbingers of unstoppable invasions? They can be.

Between Gentrification and Depopulation

Bridged islands can be awash with seasonal sojourners. Long and short-term relocation has reached levels never experienced before in human history. Moreover, as Gillis (2004, 147) reminds us, it could be getting increasingly difficult to identify the locals/insiders from the visitors/outsideers (e.g., Marshall 1999). A broad swathe of fairly affluent visitors is today likely to invest in island property, more so where this property (thanks to bridges, tunnels and causeways) is just a few hours' drive away from their mainland home. Real estate prices may rise to meet this new demand. 'Gentrification' (after Glass 1964; also Berry 1985; Clark *et al.* 2007) leads to an embourgeoisement of the host island society, gradually marginalizing the poorer locals who may be bought out by sweet deals, or who otherwise may have to sell or to move in order to secure more affordable accommodation: initially on the island; but at some point perhaps even off 'their' island. These dynamics kick in faster, and they develop at a more galloping pace, on the smallest islands, with the smallest populations, and which are closest to mainlands, especially to heavily populated, and more affluent, mainlands. In some cases, islanders recognize the writing on the wall; they may scramble to pre-

serve their heritage; some shrewdly deploy their regulatory powers to limit, cap or somehow constrain the purchase of secondary residences by those 'come from away': Åland, Bermuda, Jersey and Malta offer different but relevant examples of this. But not all islands enjoy 'the resourcefulness of jurisdiction' (Baldacchino and Milne 2000).

The other side of the coin is to resist being bridged and suffer the consequences. This is however no definitive barrier to new arrivals: some visitors are seeking precisely smallness and remoteness (Gillis 2004, 146); and low-cost, no-frill airlines may provide alternative access. Otherwise, the local population may itself give up in the face of chronic difficulties and relocate to a mainland, even if begrudgingly. In spite of some dissenting voices about direct connections between accessibility and population levels (e.g., Cross 1996), Royle and Scott (1996) present data that reveals how, between 1841–1991, of the 72 populated islands off the coast of Ireland which at some point had more than 100 residents, only one with a mainland link had lost all its permanent population within that 150-year span. No less than 29 non-bridged islands experienced total depopulation within that same period. Moreover, population levels on the (still populated) un-linked islands have plummeted; while those of the linked islands experienced only marginal decline (Table 1).

Gentrification and depopulation come across as equally dramatic and extreme consequences of respectively having, or not having, a fixed link to a mainland. There are many shades of grey in between. With the building of a fixed link, ferry companies could lose customers and employment; while new jobs are created for bridge construction and maintenance crews. With the construction of a fixed link to an island from

Table 1

Population changes in Irish islands: impact of fixed links on 72 islands based on Royle and Scott 1996

Year	1841		1991	
	Number	Population	Number	Population
Islands with Fixed Link	16	6,640	19	5,961
Islands without Fixed Link	56	27,821	27	3,570

a mainland, tourist numbers could increase—indeed, this may be a strong motivation to have the bridge in the first place: but, with ‘distance decay’, the visitors’ typical length of stay on an island could well decrease (e.g., Hall 2005). With a bridge, economic development is weightier, faster, closer, broader; and any attempts to market the island as ‘a pastoral retreat’ (McCabe 1998, 24), a place that time forgot, start becoming hollow. A bridge, however, could also facilitate and encourage feelings and celebrations of distinctiveness, a ‘renewed and assertive localism’ (Milne 2001, 111), fuelling a local cultural industry that celebrates separateness (though hardly apartness, except as a form of bravado or sham nationalism).

Bridging All Gaps

Continuous improvements in engineering technology, and the temptation of crafting mega-projects that taunts politicians, business investors and contractors of all ideological stripes, mean that there is likely to be some interest and pressure to eventually link all ‘bridgeable’ islands to mainlands. This is increasingly so because insufficient financial backing and insufficient technological acumen are the two key contemporary reasons which are used to justify why bridges have not been built across all bridgeable space. The domesticity of nature and space is now a rampant, global pursuit. Gaps, it seems, are now there to be bridged, (just like mountains are there to be climbed) and the naïvete increases along with the fiscal and technical possibilities. Anyone opposing the closing of gaps is against progress.

Islands are the challenging targets of such a mission, their distinct geography having seemingly eluded and mocked both human ingenuity and *terra firma* for most of history. But the situation is changing: the dramatic road/rail Øresund bridge/island/tunnel connecting Denmark to Sweden was opened with much fanfare in July 2000 (and its impact assiduously studied since: e.g., Bucken-Knapp 2001; Hospers 2004); the link between Japan’s four main islands was finally completed in 1998 (www.jrtr.net/jrtr02/pdf/photo.pdf). The island of Great Britain was linked to the European mainland via the Channel Tunnel in 1994 (e.g., Holliday *et al.* 1991; Gibb 1994).

A bridge/tunnel connected some of the Lofoten Islands to mainland Norway in 2004 (www.fjordlofoten.com/map-of-lofoten-norway.htm). Île de Ré was joined to the French mainland by a causeway in 1988 (Campbell 2005). The Rion-Antirion bridge straddled the 3-km Gulf of Corinth in Greece in 2004 (The Economist 2004).

Bridge mania is rampant: there is also currently talk of bridges connecting India to Sri Lanka; Saaremaa to mainland Estonia; the Westmann Islands to ‘mainland’ Iceland; mainland China to renegade Taiwan, 150 km away (www.guardian.co.uk/china/story/0,7369,1390013,00.html). A 3.3-km bridge to connect Sicily with mainland Italy across the Straits of Messina, and a tunnel connecting the island of Newfoundland to mainland Labrador, were both mooted for some time (The Economist 2003). Will this inexorable march of steel and concrete ever stop? And why should it stop at all? Isn’t communication, essentially and inherently, a good thing?

The facts are more complex. Other than the physical structure *per se*, as well as an island’s relative size, economy and location, a set of other issues can affect the outcome of a fixed link between and island and a mainland. For example:

- **Costs:** The real (net) value of a bridge toll, and/or the real (net) cost of fuel, can change the nature of the connection: to some, the associated costs may be so prohibitive that it would be as if the fixed link did not exist at all. Evidence of this can be gleaned by changes in vehicle bridge usage over time. It is after all ease of access, and not so much mode of access, that is critical in bringing about socio-economic change.
- **Choice:** The impact of a bridge would be more dramatic when all travelers are obliged to use it as the only means of communication between island and mainland. Where a bridge must compete with ferries, airlines and other means of transportation, private or public, its impact is less severe and its tolls, if any, more sensitive to demand (e.g., Flyvbjerg *et al.* 2003; Matthiessen 2004).
- **Weather:** Harsh weather conditions increase the difficulties and risks associated with a mainland-island crossing or vice versa; they can also threaten the reliability of any transportation systems. Bridges are not exempt

(since, for example, they can be forced to close when winds are exceptionally strong).

- **Distance:** An island which is closer to a mainland would tend to enjoy more diverse, more frequent, less expensive and more reliable ferry services, making the provision of a bridge less critical to its communication needs. The European Union's informal definition of an island includes a minimum distance of 1 km from the nearest mainland (CPMR 2002, 12).
- **Population:** A more populated island would be able to sustain a higher demand for transportation services (including bridges), increasing the likelihood of competitive provision and consumer choice. Moreover, linking islands to contiguous highly populated mainlands risks transforming the islands (even more) into the mainland's 'pleasure periphery' (Turner and Ash 1976).

All these arguments would make better sense when applied to an actual, concrete situation. Our case study dwells on the Confederation Bridge, linking Prince Edward Island (PEI) to New Brunswick (NB) across the Northumberland Strait. This project has probably been the most keenly debated and most traumatic event in the modern history of PEI, Canada's smallest province (Calhoun 1989; Weale 1991; Begley 1993; Shea 1993; Johnston 1995; Macdonald 1997). The bridge's tenth anniversary of its opening (in June 2007) is all the more reason to propose this sober and critical appraisal of the 'bridge effect'.

Prince Edward Island ... or Prince Edward Peninsular?

In *A Geography of Islands*, Royle dedicates the first photo in his book to the 14-km Confederation Bridge, linking PEI (and its 140,000 citizens) to mainland New Brunswick since 1997 (Royle 2001, 13). To judge from the lead-up, many Islanders held high hopes from the completed structure. 'Our Island province is about to experience a transition to a new frontier of vigorous expansion and renewed community vitality,' PEI Premier Pat Binns predicted at the official opening. 'Our traditional sectors of agriculture and the fishery will be enhanced by a marked improvement in transportation infrastructure. Our tourism industry can now look forward to strong

growth and extended shoulder seasons' (Journal-Pioneer 1997).

The decision to bridge the gap (that is, the Northumberland Strait) was by no means universally popular, however (Royle 2001, 114; Begley 1993). Prominent islanders like Betty Howatt campaigned vigorously against the bridge—because she saw 'a loosening of the social fabric in the province' and claimed that 'people no longer have that sense of place that they once had' (The Guardian, PEI, 8 November 2003). In a January 1988 plebiscite, 40 percent of islanders voted against a fixed link. For many of these, a fixed attachment was a violation of a natural order of things; a forced and permanent alternation of an intimate and fundamental spatiality (e.g., Weale 1991, 82). A key perceived threat was to the impact that a bridge would have on the island's unique and distinct 'way of life.' The latter may escape definition, although Ansel Ferguson, an island fisherman, describes it as 'a little more friendliness, a little more community, a little less crime' (Calhoun 1989, 19). Critics argued that easy access to the island province would damage the tranquility, natural beauty and charm of island life. Islanders did not want the green fields and red soil to be tarnished by the hotdog stands and jukebox joints that would transform the place into another Coney Island (CBC 2002). A fixed connection would allow New Brunswick and Nova Scotia firms to truck their products more efficiently to PEI, as well as encourage Islanders to go shopping in such places as Moncton or Halifax, undercutting the island's smaller producers and retail outlets. Fishers complained that any solid structure in the strait would affect fish stocks, shellfish beds and especially lobster (FEARO 1990, 13). Some 630 Marine Atlantic ferry workers (88 percent of whom were islanders) feared for their jobs, as did those dependent on 'spin-off' employment in the service industry, particularly the 56 percent of employees who lived in the small community of Borden (DPA Group 1987, 16). Some questioned the environmental and safety advisability of such a scheme, including the threat to shipping in the strait and seabird nesting areas (Calhoun 1989, 15). In the House of Commons, the Minister of Public Works, R.W. Prittie, argued that the influx of vehicles using a fixed link to PEI would destroy the charm and uniqueness of the Island (House of

Commons Debates, Ottawa, 18 September 1964, Vol. VIII, 8218). An island MP queried the simplistic, almost magical relationship attributed between a fixed link and economic prosperity (Senate Debates, Ottawa, 1986–1988, Vol. II, 2163). A link was seen to provide at best only a minor and short-term remedy to the region's economic mishaps. Others argued that the ferry ride was in itself a tourist attraction:

No, I don't like the Bridge. Now you set off for somewhere on the other side and the first thing you know you're there. What kind of a God-Blessed trip is that? (Weale 2003, 96).

Yet, in spite of the seriousness, and occasional emotional outbursts, with which 'the matter of the bridge' was debated (McCabe 1998; MacDonald 2007), its actual impact—economic, social, political and environmental—on island life has not been the subject of serious and systematic study. It is thus just as ironic that so much debate took place about the imputed impact of the Confederation Bridge (referred to simply as 'the Bridge' to 'the island') before it was built and completed. Only a few scholarly or technical reports are known (so far) to have been undertaken after the bridge's completion; appraising whether the various prognostications made before the bridge was opened have been proved true or false; and reviewing in a scientific and level-headed manner what has been the actual score-sheet of the impact.

Six categories of data are discussed below to flesh out any 'bridge effect', using the above methodology. The categories are listed as if they are mutually exclusive (for the sake of neatness and ease of explanation), when they are actually inter-related. The chosen categories are: (a) tourism and traffic; (b) exports and imports; (c) wholesale and retail trade; (d) population; (e) environmental degradation; and (f) property prices.

Tourism and traffic

Tourism statistics are quick to manifest any bridge effect since, literally overnight, what was a more remote destination suffers 'distance decay' and becomes suddenly closer, because it is easier, faster and/or cheaper to visit (Hall 2005). MacDonald (2006) observes how, in 1997, '... as if on cue, the number of visitors to PEI topped the

one million mark for the first time and tourism spending jumped 63 percent'. In its 1999 provincial budget, the PEI Government declared correctly that '[i]t is evident that the scale of tourist activity on PEI has increased very significantly since the opening of the Confederation Bridge' (PEI Government 1999, 6). The pre-bridge prediction was that tourism to PEI would grow by 20 percent; but numbers in the first summer (1997) actually rose by 57 percent when compared with the previous summer's figures (Royle 1999, 252). Another consequence of distance decay is the likelihood that visitors to PEI will spend less time there (indeed, from a mean stay of 4.7 nights per person in 1992–1994, this was down to 4.4 nights in 2002–2004), also because more visitors would be coming to PEI from closer locations, and possibly on more trips. Since 1997, PEI visitation statistics seem destined to slide to pre-bridge levels; it is tempting to trace this to an erosion of the bridge's 'novelty effect', but there is (as yet) no scientific basis for such a stance.

The increased frequency of travel off/to PEI by vehicle is borne out clearly by the statistics and is likely to indicate a greater readiness by regional residents (apart from tourists) to travel via the bridge, given its greater convenience, than they would had they been obliged to use the ferry. In fact, annual vehicular traffic on the former Borden-Carleton (PEI) to Cape Jourimain (NB) ferry service was growing steadily and reached almost 1 million vehicles in 1996. Bridge traffic per annum jumped to almost 1,600,000 vehicles in 1998 and has steadied at around 1,500,000 since (PEI Provincial Treasury, various years). Northumberland Ferries data (obtained via Transport Canada) also indicate that an additional 260,000 passengers were using the ferry service from Wood Islands (PEI) to Caribou (NS) annually over 1989–1996; this figure has gone down to around 230,000 passengers since, suggesting that the bridge has lured some travelers away from the ferry. Given that the population of the maritime provinces has been roughly stable during the period under review, the statistics suggest a real increase in per capita passenger travel because of the bridge, amounting to around 400,000 more vehicle crossings per year. (Increase in traffic flows are a common effect of fixed links: e.g., Knowles 1996, 222–224; Matthiessen 2004, 36.)



Exports and imports

Other economic data usually exhibit longer time lags. Using a simplified three-sector model, Rankaduwa (2006) has analyzed the real growth rates of the PEI economy over the period 1982–2004 in terms of total output (gross domestic product), total exports and total government spending. His main observation is that the share of exports within total output has ‘increased significantly’ (*ibid.* 2) after 1997; so has the share of imports to total output. These are twin indicators of an island economy that is increasingly open and dependent on international trade (exports and imports). Provincial Treasury data confirm these trends, with 1997 registering a whopping 25 and 30 percent respective increase in the value of exports and imports over the previous year; 1998 again registered increases almost as high as 1997 (PEI Provincial Treasury 2004). Main examples of this export surge would be food, such as processed potatoes (chips and fries) and time-critical fresh seafood (fish, mussels, lobster, crab) and, more recently, aerospace-related products. Since international exports mainly refer to the movement of goods to the U.S., this export prowess may be an outcome of the ‘coming on stream’ of the 1994 North American Free Trade Agreement, itself an extension of the Canada–US Free Trade Agreement of 1989. PEI’s international exports have been steady since 2000; and the 1990–2005 trend (rate of increase) is now identical to the 1990–1996 trend (Byrd and Généreux 2004).

Wholesale and retail trade

PEI has traditionally had a larger number of small, family-owned retail stores than other provinces, with few shopping malls and less selection of consumer goods. The opening of ‘the fixed link’ was viewed with concern by the provincial government and the retail sector alike, as many thought islanders would use the quicker transportation connection to drive to Moncton for many large-item purchases. There has been some increase in the number of off-island shoppers (the hefty bridge toll dampens the urge); while the PEI provincial government encouraged ‘big box’ retailers to set up operations in the province, offering such incentives as the elimination of provincial sales tax on clothing and

footwear. This has led to the opening or expansion of a batch of such stores as Chapters, Future Shop, Home Depot, Sears, Staples and Wal-Mart, all since 1997. Correspondingly, some smaller, locally owned stores have gone out of business or have fallen victim to mergers or acquisitions. Seasonally adjusted retail sales on PEI grew from Cdn\$957 m (1996) to Cdn\$1,385 m (2004). The wholesale and retail sector continues to be the largest private employer on PEI: employment rose from 8,800 (1995) to 10,200 (2004) (PEI Provincial Treasury 2005, 14–15).

Population

The Province of PEI had the highest population growth rate in Atlantic Canada for both 1991–1996 and 1997–2005; while population in the region declined overall in both these time periods (Statistics Canada 2005, 21). This trend persists: except for PEI, the other three Atlantic Provinces showed a decline in population during the first quarter of 2006 (Statistics Canada 2006). The rate of demographic change on PEI, while still positive, declined after the bridge was opened (it actually declined in all Atlantic provinces); however, it remains impossible to tease out a ‘bridge effect’ from this data only. Still, an indicative survey of recent immigrants to PEI suggests that this issue is certainly important to a few of these, and that the effect of the bridge on population can be a positive one. Two respondents out of 320 claimed (without being prompted) that the presence of the Confederation Bridge had much to do with their decision to move to and settle on PEI, after 1997 (Baldacchino 2006, 35, 47). Moreover, net annual inter-provincial migration to PEI has been positive every year since 1997–1998; it was negative in eight specific years during the period 1979–1997 (PEI Provincial Treasury 2005, 35). The singular net exodus in 1997–1998 is probably due to the termination of jobs related to the bridge construction: there were over 2,400 workers employed at peak production (that is, in 1995) (Macdonald 1997, 112).

Environment

For an island that depends so much on its natural resources (sea, land) and their scapes and symbolism (through tourism) to support its economy,

it is not surprising that much concern was raised on the environmental impact of the bridge, especially in the sensitive Northumberland Strait. There are now tell tale signs of 'ecological collapse' in that stretch of water (Gustafson 2006). Many are claiming that the bridge is to blame for a 'sick strait' (e.g., CBC 2006). But, is it? There are a host of possible causes. These include: the Canso causeway, industrial pollution, toxic agricultural run-off, nutrient enrichment, indiscriminate sea-bed dredging for scallops, one or more of at least twenty-five known invasive species, coastal erosion, higher tides or warmer waters...apart from the bridge itself. Moreover, some signs of this eco-collapse were already evident before the commencement of the bridge's construction. Nevertheless, the Federal Environmental Assessment Review Office had concluded, in 1990, that '...in terms of the marine ecosystem of the Northumberland Strait, the risks associated with the proposed bridge concept are unacceptable' (FEARO 1990, 14).

Prior to the opening of the bridge, fishers had also complained that any solid structure in the strait—and a projected two-week delayed 'ice-out'—would affect fish stocks, shellfish beds and especially lobster (FEARO 1990, 13; Townley 1992, 18). In contrast, an independent consultancy report suggested '...very slight delays in ice-out of the order of one day' (Bercha Group 1991); while another technical study suggested that delays would be 'minimal' (Brown 1997, 1). Surveys conducted subsequent to bridge construction indicate that 'ice-out' is in fact occurring earlier in the spring, not later. There may be a consequential upward shift in temperatures; but this remains to be seen over a longer term to isolate any bridge effects from other factors, such as climate change (Fisheries and Oceans Canada 2006).

Property

'With the bridge in place, will people come to the island in droves and buy up all the prime land?' (Macdonald 1997, 124). PEI is alleged to be increasingly in the sights of Americans who are priced out of beach houses at home. A dream house with 900 feet (272 metres) of seafront was sold on PEI in September 2004 for US\$229,000, the equivalent of Cdn\$300,000 at

the time (Tutelian 2006). This increased demand from an affluent market would be expected to exert upward pressure on the cost of property, especially that of secondary homes and coastal cottages.

Cost of property on PEI has certainly increased in recent years, but the property market has been bullish throughout the whole of North America. Is PEI simply a reflection of a continental trend? According to the Canadian Real Estate Association, the average cost of a property sold via the multiple listing service (MLS) on PEI in June 2006 was Cdn\$134,115, a full 17.4 percent higher than the equivalent figure for June 2005. This was the third highest percentage price increase by province or territory in Canada for that year, exceeded only by the 35 and 21 percent boost over the same 12-month span for mean property prices in the booming markets of Alberta and British Columbia, respectively. PEI still accounts for the least expensive housing in Canada on average by province, marginally cheaper than in Saskatchewan, and less than half the mean Canadian average (CREA 2006). Property price increases in PEI accelerated especially in the period 2001–2004 (as did the consumer price index), so that the mean cost of housing in the island province is now almost equivalent to that in New Brunswick (Baldacchino and Spears 2007).

Discussion

In summary, and if a nine-year span of post-bridge operational data is long enough, it appears that the Confederation Bridge has not (so far) had the significant impact that many feared, or hoped, it would have on PEI society and economy. The *status quo* has proved more resilient than expected, for better or for worse. As with other bridging projects, no 'big push' or 'heavy flow' (Bråthen 2001, 25; Bygvrå and Westlund 2004, 41, respectively) has (yet) occurred. Is this part of the postulated 'performance paradox' (Flyvbjerg *et al.* 2003, 3)?

In tourism, the bridge has proved a double-edged sword: making the island closer, but at the same time less exclusive; in property, the bridge has accentuated (but not triggered) a rush for oceanfront lots and supported an upward push on property price increases; in commerce, the bridge may have contributed to some expansion

in provincial exports; however, the rate of economic expansion over 1992–2000 is steady and does not necessarily manifest a bridge effect. The bridge has made a positive but minor contribution to attracting and retaining newcomers to PEI. The increase in total vehicle and passenger traffic is (from the variables considered) the only one which displays a lasting major break in 1998. Finally, the bridge may have exacerbated the decline in the overall health of the Northumberland Strait ecosystem.

This is as much as one can surmise on the basis of measurable data. One cannot postulate what might have, or have not, happened to and on PEI had the Confederation Bridge not been built and the PEI-NB ferry continued running. Nor have any wider, regional consequences of the bridge (e.g., Vickerman 1991) been examined. Moreover, this preliminary analysis excludes some rather large intangibles, including longer-term perspectives of the bridge's impact and economic viability, which would include a sober discussion of its decommissioning around the year 2097 (O'Grady 1993; Townley 1992).

Conclusion

There is one other matter that one must acknowledge before closing. As a recent immigrant reported: 'PEI is the only province in Canada that one must pay to leave' (Baldacchino 2006, 59). The existence of a bridge toll effectively means that there is no seamless connection between island and mainland. Any socio-economic impacts of bridges on islands would be more significant if tolls on the use of the fixed links connecting these islands to mainlands were not in place. In many fixed link 'island-mainland' scenarios, there is: (1) no toll at all to speak of (e.g., Ireland: Royle 2007), (2) the toll was/is a bone of contention and civil resistance (e.g., Skye, Scotland: McQuaid and Greig 2007); or (3) the toll is a shrewd policy instrument used to facilitate islander mobility while obliging only visitors to pay an 'eco-tax' (e.g., Île de Ré in France: Barthon, 2007). Tweaking the bridge toll on the Confederation Bridge could lead to some interestingly new bridge effects.

'The Bridge' is today actually portrayed and marketed as an essential island artefact, suggest-

ing that the strident resistance, and painful accommodation, to the massive structure into the PEI psyche is a thing of the past. Meanwhile, 'the Bridge' serves as one of the three current backgrounds to the island province's automobile number plates¹: acting as a continuous, tell tale reminder of an inalienable physical presence; an icon, for better or for worse, and packaged as if a natural, and uncontested, component of the island's topography.

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1 The other two being 'Province House as Birthplace of Confederation' and 'Anne of Green Gables'. Both these attributes are actually seeped in popular fiction.

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