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Jugaad as systemic risk and disruptive innovation in India

Thomas Birtchnell *

Department of Sociology, Lancaster University, North Bowland, Bailrigg, Lancaster, LA1 4YT, UK

Jugaad is the latest/trend in management and business reports of India's awakening. The term refers to the widespread practice in rural India of jury-rigging and customizing vehicles using only available resources and know-how. While the practice is often accompanied by indigence and corruption in traditional interpretations, the notion of *jugaad* has excited many commentators on India's emergence into the global economy in its promise of an inimitable Indian work ethic that defies traditional associations of otherworldliness and indolence – widely reported as inherent in India's society and culture. *Jugaad* has been identified across India's economy in the inventiveness of call-centre workers, the creativity of global transnational elites, and in the innovativeness of Indian product designs. The term has seen an unprecedented growth in popularity and is now proffered as a tool for development and a robust solution to global recession. *Jugaad* is now part of a wider method for working within resource constraints as 'Indovation'. In this context, the trope is presented as an asset that India can nurture and export. This article argues that far from being an example of 'disruptive innovation', *jugaad* in practice is in fact part and parcel of India's systemic risk and should not be separated from this framing. Viewed from this optic, *jugaad* impacts on society in negative and undesirable ways. *Jugaad* is a product of widespread poverty and underpins path dependencies stemming from dilapidated infrastructure, unsafe transport practices, and resource constraints. These factors make it wholly unsuitable both as a development tool and as a business asset. The article questions the intentions behind *jugaad's* wider usage and adoption and explores the underlying chauvinism at work in the term's links to India's future hegemonic potential.

Keywords: *Jugaad*; Indovation; Hindolence; disruptive innovation; Tata Nano; Hindustan Ambassador; transport; Indian business elites; mobilities; risk; Hinduism; India; South Asia

Introduction

India is really waking up, but she is doing so in her own Indian way. For some years past it has been one of my daily duties to arouse an Indian boy, and I know exactly how an Indian wakes. It is a leisurely process. He slowly stretches his legs and rubs his eyes, and it is at least ten minutes before he can be said to be really wide awake … With India waking up, there never was a time when she stands more in need of some kindly person at her side to tell her what to do … we need to tell her to wash her hands and face,

* Email t.birtchnell@lancaster.ac.uk

> because there are certain elementary matters of sanitation which must be attended to if India is ever to become a wholesome and prosperous country. And we have got to teach her how to work, because India wide awake, but idle, might easily become a source of great mischief.
>
> (Elwin 1913, v–vi)

Awe-struck reports of India's 'awakening' are tarnished somewhat by reports of the country's overloaded vehicles, improvident infrastructure, and widespread tolerance of systemic risk. There is no stronger example of this than the *jugaad*. A bricolage vehicle; jury-rigged, self-repaired, and the product of a 'mend and make do' ethic. The *jugaad* is part and parcel of India's 'infrastructure deficit' (Sharma 2009), a robust and cost-effective solution to rough roads and poverty. Awareness of India's infrastructure 'deficit' predates considerably its economic emergence. As a New Scientist report highlights: 'Everywhere you go in India, you see Tata trucks, invariably overloaded, often with people riding on top of the load, and bouncing over incredibly bad roads' (Hanlon 1978, 35). Since the 1990s this infrastructure 'deficit' has increased with economic growth (Pucher et al. 2007). Risk on India's roads is also attributed to a general lack of road discipline (Kartikeyan et al. 2010). Inoperative vehicles aggravate this as 'erroneous parking practices, lack of reflectors and indicators' as well as 'overloaded trucks with protruding materials make these stationary vehicles a nightmare for motorists on state highways' (Kumar 2010, 1).

In the past, this systemic risk might have been perceived as problematic for development. Yet, this appears not to be the case – the culture of 'making do' evident in *jugaad* is present throughout the system and India's economic growth nevertheless remains high. Within this framework, action has been particularly hampered by the poor regulation of safety norms toward vehicles 'that do not conform to international safety standards … e.g. a three-wheeled vehicle to seat 7 passengers' (Dandona 2006, 131).

The term *jugaad* specifically refers to jalopies – cobbled together motorcycles, trucks, and cars that can take a larger number of passengers than conventional cars, often sporting powerful suspension and off-road capabilities. Usage of the term was strictly in this context in its early manifestations: 'the vehicle would not meet any mandatory industry standards. The *jugaad* cannot be registered, has no number plate, can't be insured, and does not pay any tax' (Mitra 1995, 10). From this practice of jury-rigging and self-repair, *jugaad* has developed as slang for a 'quick fix' or for 'making do'.

For instance, the Bollywood movie *Jugaad* (2009), written and produced by Sandeep Kapur and directed by Anand Kumar, revolves around the exploits of a CEO who is a victim of the Delhi sealing drive that saw the enforced closure of shops in residential areas by municipal authorities. To work around this crack-down, the CEO had to mobilize his *jugaad*. In this movie, the self-empowering connotations of *jugaad* contrast with the dilapidated and jury-rigged Ambassador the protagonist drives manically around Delhi as he attempts to mobilize his informal networks and residual capital.

The word *jugaad* has also developed an alternative meaning for low-level, border-line criminal activity in the informal economy, also played upon in the Bollywood film, where crime is instigated with minimal resources (Jeffrey 2010). In the social sciences, the term has been recognized to mean bribery: '… those who can do *jugaad* [liaise effectively] with the police, with the *Tahsil*, with banks – these are the persons

who matter in the village today [rather than those who have more land or high caste rank]' (Krishna 2003, 1175). In the informal economy, it has been connected to digital piracy within the context of India's growing ICT sector, a '*jugaad* modernity' (Thomas 2005, 443).

However, in business and management literature, we see a very different use of the term. In what New Delhi-based IT entrepreneur Karan Vir Singh of Voxtronix Dezign Lab identifies as the '*jugaad* factor' the connotations of indigence and criminality have disappeared (Barrett 2006, 198). In reaction to the growing awareness of systemic risk, a movement has emerged that attempts to rebrand, or recast, these practices as innate, 'grassroots' innovation (Mitra 2006, 40), a 'native inventiveness steeped in a culture of scarcity and survival' and linked to the Indian ICT sector's phenomenal growth and desire for systematic innovation (Krishna and Holla 2009, 426). Commentators have reforged *jugaad* as a work ethic reflecting the resilience and creativity nascent in Indian culture. A cosmopolitan character of innovation: a sense of 'Indian genius' (Talukdar 2004). As a media interview on 29 April 2010 with the New Delhi Director of the documentary *The Great Indian Jugaad* Anandana Kapur illustrates:

> I was helping a friend fine-tune his presentation for admission to a business school in France wherein he proposed that the foundation of Indian businesses is *jugaad*. The sheer versatility of the word and the instant comprehension it evokes across the country made me want to explore this unique 'Indianism' in depth.

Thus, it comes as no surprise that Nandan Nilekani, Co-Founder of Infosys, who features prominently in Thomas Friedman's *The World Is Flat* (Friedman 2008), champions the term in his recent book *Imagining India* (Nilekani 2008). Of course many recognize the contradictions in this appropriation. Rajeev Mantri, Executive Director at venture capital firm Navam Capital, describes a '*jugaad* myth' that has the potential to impinge on official accounts of systemic risk in India through globalizing the tolerance of these practices: 'venture capitalists and management gurus have praised this approach of doing more with less, but *jugaad* is more an outcome of limited access to capital, resources and infrastructure, than it is innovation' (Mantri 2010, 1).

Like Mantri, I was inspired to broach this topic by the different ways *jugaad* has grown to coterminously represent distinct understandings of risk *and* innovation in the popular tropes of India's 'sleepiness' and 'awakening'. These understandings are far from reconcilable. As a sociologist, I think there needs to be more attention to what N.S. Raghavan in Rishikesha T Krishnan's *From Jugaad to Systematic Innovation* describes in passing as an existing failure to 'appreciate the extremely complex interplay of a plethora of factors, including strongly embedded social and cultural barriers' in *jugaad* (2010, back-cover).

Traditionally, the pervasive indigence in India has been attributed to an inherent *indolence*. The trope of indolence here implies laziness, sleepiness, and avoidance of suffering. The Protestant work ethic that the traveling Anglican priest Edward Fenton Elwin sought to encourage in his ward at the beginning of this article subsumes the importance of suffering in industriousness and hence industrialization. It is an ethic encouraged by ideas of achievement through application, as Samuel Smiles's *Self Help*, including biographical examples of Victorian industrialists, made clear: 'In all these cases, strenuous individual application was the price paid for

distinction; excellence of any sort being invariably placed beyond the reach of indolence' (1857, 9). Elwin in his travels around India was confronted by an entirely different sense of routine and indeed found his own disciplined sleeping patterns disrupted: 'An Englishman [Elwin] travelling by night in a bullock-cart found that the ceaseless jingling of the bells kept him awake and he ordered them removed' (Elwin 1913, 174). Citing indolence as a crucial inhibitor of development was popular throughout the colonial era amongst both elite British and Indian commentators[11] and recurred well into the post-colonial era. From its inception, the notion of indolence was wrapped up with how best to encourage India's development and, more specifically, its transport geography:

> If we are to force the consciences of men, are we to foster their superstition, whilst we cautiously abstain from lending any official sanction to efforts tending to awaken them to a knowledge of 'a more excellent way?' The excessive caution conspires exceedingly with the bigotry and the indolence of the Hindoo to prevent any improvement either in his moral or his physical wants … Look at the country so long part of the British territory. Where are the roads? Where are the bridges?
>
> (Anonymous 1832, 45–46)

In early reports, this indolence was perceived as a character trait inimitable to India and the tropics (Sypher 1939; Arnold 2004). The hot climate 'inclined the native to indolence and ease' (Dow 1803, Ixxi). Malaise was a considerable problem for representatives of the East India Company such as Alexander Dow who reported in 1768 on Bengal's ailing textiles production that 'Industry cannot be forced upon a people; let them derive advantage from toil, and indolence shall lose its hold' (1803, cI). Missionaries as well agreed with these assessments, criticizing the 'naturally timid and indolent character of the Hindu', which obviates any sense of industriousness (Dubois 1862, 46).

The trope of indolence, however, was not concurrent amongst many who encountered Indian culture vicariously.[2] Voltaire in assessing missionaries and travelers' accounts of indolence interpreted them as instead 'mildness' and 'abstinence' linked to spirituality (Mohan 2005). The idea was progressed further by Max Weber, who explains reports of indolence through the idea of 'otherworldliness', a 'cultural conditioning against economic enterprise' (Sharpe 2003, 38). (H)indolence remained a popular trope through the post-colonial era and played a role in twentieth century international policy experts' development reports, which were radically revised in light of interest in India's emergence as a potential future global power (Birtchnell 2009). While never couched solely as lying in the domain of religion, this pervasive idea has most commonly been linked to attitudinal impacts on development: religious practices, beliefs, and values. It is the sustained 'sleepiness' that has prevented India's 'awakening' (MacDonald 1910; Eddy 1911; Wellock 1922; Karunakaran 1966; Bose 1976). In the late modern context of this heritage, *jugaad*, as part of a wider milieu of systemic risk, has until recently substantiated India's lack of a 'spirit of modernity': a 'mentality' shared by indolent local elites who 'lazily' fail to participate in India's awakening, 'whose behavior is akin to that of ordinary Indians who bemoan the chaos of India's streets, even as they ignore traffic signals themselves' (Sagar 2009, 812).

In this article I examine how *jugaad* stemming from rural poverty – the latent influence on overloaded vehicles, accidents, and a sense of a dire lack of safety in

India – is being reframed in business ideology that places *jugaad* into discussions of innovation, leap-frogging, and even global leadership. The term's appearance in business literature in this latter form stems in part from Indian corporate desires to disassociate India with systemic risk and instead to promote ideas of what Rajendra Pachauri, the Chairman of the Intergovernmental Panel on Climate Change (IPCC) well-meaningly calls 'Indovation' (Lamont 2010). In this understanding, India's post-1990 economic expansion now proves that poverty and resource constraints are no more barriers to economic growth and therefore systematic innovation. The latent potential in 'Indovation' seems to suggest a work ethic that India might utilize and even export to other countries facing or experiencing resource constraints.

In the second section, I frame *jugaad* in India as systemic risk. The third section contrasts this optic with business uses of the term. The fourth section discusses ideas of safety in India and those in the rich world, highlighting theory in sociology on risk that questions the real effects of pervasive risk management on innovation. The fifth section critiques the logic of systematic innovation and the history of innovation as a linear, evolutionary, and 'polished' process giving the example of the Tata Nano as a counterpoint to the *jugaad*. Finally, I assert that *jugaad* cannot be separated from its wider context of poverty and frame the 'distortions' in its transferal to global issues.

Jugaad and systemic risk

The widespread recognition and acceptance of risk in India highlights the dramatic social change that has occurred – the shift from the village to the city that characterizes modern India (see Srinivas 1976).[3] The master images and narratives of 'Brand India' (Mongia 2005) have shifted since the economic reforms of the 1990s in emphasis from spirituality and otherworldliness to extraordinary growth and development and the consequent rapid upscaling of risk has been most apparent in journalistic accounts on the ground. Reports of India's systemic risk are for the most part counter-intuitive to its brand integrity:

> Surat, India – This western city has at least 300 slum pockets, grimy industry, factory-fouled air and a spiraling crime rate … It is the kind of place where the body of a woman killed by a passing truck is left in the street because no one knows her … As the people shift, so does the very nature of India. This is a nation of 600,000 villages, each of them a unit that has ordered life for centuries, from the strata of caste to the cycles of harvest. In this century, cities' pull and influence – not only financial but also psychic – are remaking society.
>
> (Waldman 2006, 11)

Yet these accounts have their origins predominantly in the reports of visitors – local people in India are forced to 'make do' and tolerate systemic risk. Thus, official accounts conclude that traffic-related injuries stem not only from infrastructure shortfalls, but also from social attitudes to safety.

The World Health Organization's (WHO) *Global Status Report on Road Safety* shows that India has an overwhelming number of deaths due to road accidents. In 2007, 123,991 freight drivers lost their lives (Dash 2009), demonstrating drivers are at risk as well as pedestrians. The largest deaths by road user (29%) is defined in the category 'Other' excluding pedestrians, cyclists, 2 and 3 wheelers, passenger cars and taxis (WHO 2009, 114).[4] One study of 2139 cases of road traffic casualties in 72 hours at the J.N Medical College Hospital, Aligarh indicates that 13.88% of

pedestrian fatalities were due to '*jugaad*' (Husain, Haroon, and Mazhar 2009, 109). Systemic risk is a problem that is confounded by pervasive levels of poverty, corruption, and 'making do' at all stages of the supply-chain. India's roads are dangerous by the other countries' standards 'in this respect India is at least six times worse than the worst of the European countries' where 'unauthorized occupations pose a major traffic hazard to the road users as well as to the roadside community' (Ranade 2009, 7). India's citizens, in their localized risk management strategies, are also unwilling participants in the infrastructure 'deficit' through their exposure to risk from unsafe and unregulated vehicles.

Jugaad and systematic innovation

The dialectical potential of the term *jugaad* came to the attention of theorists through both an exposure to India's dramatic poverty and its capacity for globalization (Lindsey 2002, 163). It is crucial that we approach the recent usage of the term through the discourse of India as an emerging power and the dominant ideology of innovation prevalent in the developed world as a product of vast capital reserves; organizational research, investment, and development; and sophisticated flows of talent and entrepreneurship. In this framework, innovation is indicative of sustained and ongoing growth in direct competition to America, where India appears as the next superpower 'making *Jugaad* one element in the almost unbelievable growth of today's Indian economy that has left economists scratching their heads' (Rai and Simon 2007, 31). Thus, achieving systematic innovation becomes a priority not only for the rich, but the whole society; innovation becomes a development imperative.

India has become a model for the robust innovation framed by *jugaad* through its visibility as a global ICT hub – this has provided a context for elaborations of *jugaad* as a work ethic (Krishna and Holla 2009). The fact that the ICT sector has grown rather than diminished – and in the process 'value-added' itself to more respectable business platforms – has been taken to mean that the *jugaad* ethic is a path to systematic innovation that can be sustained and that is competitive on a global scale. There is now a disconnect between these two meanings: 'India's distinctive innovatory competence can be best summed up in the popular expression "*jugaad*" – a concept familiar to travellers on Indian roads for vehicles prone to several types of mishap' (Bhoothalingam 2010, 6–7). Thus, the innovations that have occurred globally in the ICT sector have eclipsed more localized systemic risks and, in turn, *jugaad*'s association with negative associations such as indolence and indigence.

In attempting to gloss over these contradictions, a link between *jugaad* and leap-frogging emerges (Nath 2008). In this reframing, the *jugaad* ethic offers other emerging countries the opportunity to progress over the limitations set by resource constraints and poverty. In 'the land of *jugaad*' a 'lack of resources becomes our [India's] biggest asset' (Munshi 2010, 1). *Jugaad* thus becomes 'Indovation'. Here *jugaad* fits into the idea that 'poverty is the mother of invention' as a recent report suggests:

> 'why innovate?' For those working in and with poor communities the answer is: because you have to. Technologies from the outside world fail to work at all, fail to work properly, and break. Hence the North Indian concept of *jugaad* – the improvised quick-fix to get or keep technology working within an environment of relative poverty and resource constraints. Although the terminology may be localized, we can see *jugaad* in poor communities worldwide …
>
> (OECD 2009, 51)

Resource constraints and poverty are an issue for many emerging countries and in this reframing, *jugaad* is the ultimate 'quick fix'.

Jugaad operates best in a 'frontier environment' in the face of 'seemingly insurmountable red tape' and 'equipment shortages': reimaginings of *jugaad* sit in a wider framework of a sense of a 'social mission' in Indian business that looks for traits 'deeply rooted in Indian culture' (Gulati 2010, 26). Thus, *jugaad* is pivoted as a 'new face of global competition' wrapped up with the achievements and work ethics of transnational elites such as Infosys's Nandan Nilekani and Wipro's Vivek Paul (Hammonds 2003). '*Jugaad* in action' has become part of 'The India Way' under the direction of India's 'Top Business Leaders' (Cappelli et al. 2010, 5). In this sense, *jugaad*, in this reimagining, has been severed from its original core practices grounded in resource constraints and risk.

'The creativity and insight intrinsic to "*jugaad" can be harnessed* and extended … Such extension to value-generating solutions will require using science, technology, research, invention and then marrying these to insight' (CII 2007, 17). Thus, organizations such as the Confederation of Indian Industry (CII) hold a vested interest in reframing *jugaad* not as a product of indigence, but rather as an export from it, thus reflecting India's capacity to address its resource constraints and development. In these new constructions, *jugaad* fits into a wider discourse of 'disruptive innovation' that binds countries such as China to India in their efforts to bridge local and global markets (Tyfield and Urry 2010; Sun et al. 2010). However, the core ethic within *jugaad* of 'mend and make do' contradicts these imaginings as it directly counters concerned efforts to encourage local consumption practices. It is hard to see how the core practices within *jugaad* promote widespread adoptions of [disposable] new technology amongst the rural poor and in turn upwards movement in value chains. Jury-rigging and self-repair at the cost of safety and assurance at best perpetuate the life-spans of existing technologies, they do not encourage demand *per se*. The regulatory safeguards in the US or UK, for example, supporting consumption of disposable, complex, and non-customizable products are weak or non-existent in countries such as India. Indian consumers tend to judge new products on their durability and robustness rather than their environmental impact or cost (Devinney et al. 2006). *Jugaad* then needs to be understood within this overarching framework of resource constraints within which people 'mend and make do'.

Risk and risk-averseness

Frank Furedi in *Culture of Fear* defines 'risk' as 'the probability of damage, injury, illness, death or other misfortune associated with a hazard' and further that all 'risk concepts are based on the distinction between reality and possibility' (2002, 17). Furedi's thesis is that danger has been inflated by awareness of risk and the 'worship of safety' (2002, 8). It is a disparity between the assessment and regulation of systemic risk and links to widespread access to insurance, a shared sense of worth, and also public expenditure in infrastructure and safety. In this framework, public experimentation is regarded with suspicion; a 'belief that the risk of side-effects out-weighs the benefits of many innovations is deeply embedded in contemporary Western culture' (Furedi 2002, 28–30). Experimentation and [scientific] innovation are the focus of society's suspicions. Therefore, there has been a shift from localized risk management to societal risk prevention.

Safety laws serve as an example of the different tempos of risk that now exist between India and the rest of the world. Compliance to seat-belt regulations became compulsory in 1983 in the UK, but is only regulated in six cities in one state (Gujurat) in India. Similarly, signage on India's roads is unclear and often idiosyncratic. As Edensor (2004) has pointed out in comparing the UK and India's road fixtures, there is a distinct semiotic difference between the two motorscapes. In India, signs are often produced by local authorities, concerned citizens, or even, in the case of the Boror Roads Organization (BRO), the Indian Army. For example, BRO's much celebrated Project Himank, set up to manage road infrastructure in Jammu, India, has road-signs that read 'A Cat has Nine Lives But Not the One Who Drives', 'Mind Your Brakes or Break Your Mind', and 'Safety on Roads is Safe Tea at Home' (Conover 2010).

'Poverty attracts an unfortunate abundance of risks' (Beck 1992, 35). The *jugaad* ethic in its application to global management doctrine forgoes the risk in the term's core practices: it recasts indigence as industriousness. The practice is 'detraditionalized' from India as a 'risk society' and converts localized risk management into a parsimonious scientific and technical approach linked to techno-societal within the wider context of 'disruptive innovation'. *Jugaad* moves from highly localized efforts to keep pace with social change (resorting to building and maintaining one's own vehicle) to a global, cosmopolitan practice for contending with risk at the macro level. *Jugaad's* latent potential is its apparent attitude of disregard (otherworldliness) for the individual's lack of control in the world risk society. The ethic rejects risk prevention – now common in the developed world – and offers a model for dealing with risks as they transpire. In the Indian context, it offers a revised form of provincial, pastoral cosmopolitanism that unites the ethics of the village, that pervasive Indian trope, as a solution to current egalitarian concerns in globalization stemming from risk-averseness.

It is in this move that commentators are compelled to see a wider remedial trend in *jugaad* to tackle the dispersed sense of risk endemic in the world risk society that privileges 'safe' investments, business models, and work conditions. In this potential for transposition from innovative practices in an underdeveloped India to a global form of risk management that can be exported by a developed India, *jugaad* seems to hint at a patterning of innovation; a systematic evolution from the village to the city and from low technology to high. Therefore, the term's inclusion into the global business vocabulary stems from its potential for empowerment that is unregulated by, and reactive to, the socio-technical changes occurring in Indian society. It suggests an alternative modernity where 'Indovation' prevails unhindered by overtly sensitive risk-averseness. It is an exportable 'quick fix' both for the perceived strictures against innovation in the developed world and also a 'quick fix' for India's desires as a nation for systematic, self-sustaining innovation. Rather than leap-frogging, the practice of *jugaad* seems to suggest a way of 'skirting' around resource constraints through *ad hoc* and low-cost approaches to innovation.

Polished and *kachra* innovation

Much recent excitement has heralded the arrival of the Tata Nano, couched as a car for the masses, the 'people's car' (Thakur 2009) – in effect a polished, refined replacement for the *jugaad*. The Nano has been compared to the mass-produced Model T Ford, assumed to be a first step in the linear evolution of Indian innovation and of a sign of its economic emergence (Segal 2008, xiv). Yet if we look in detail at the specifications of this technology we are rather reminded of a very different vehicle

from the powerful (for its time) Model T Ford; namely, the East German VEB Sachsenring Trabant.

The Trabant was a car for the masses: for the family. A copy of the Ford Anglia, when introduced in the 1980s the vehicle's name, meaning 'celestial moon' or 'satellite' – referencing Soviet forays into space with *Sputnik* – hinted at the cutting edge of scientific revolution, just like the Nano. Similar as well to the Nano, the Trabant under the hood was more like a scooter, sporting a two stroke motor and flimsy frame. As users quickly realized the body was so light and pliable that the Trabant became allegory for the economic strategies of the *Sozialistische Einheitspartei Deutschlands* (SED): 'the *Rennpappe*, or cardboard race-car, the dangerously pliable body was an excellent example of the SED's tendency to try to meet needs the population did not have while ignoring the ones it did have' (Zatlin 1997, 359). The Trabant gave the appearance of innovation while offering little that was new. In a similar fashion, the Nano has won America's Edison award for best new product in 2010. Tata was one of only a few companies that dominated the Indian market for over four decades of socialism and government controls (Balaram 2004). In light of this legacy, the Tata Nano is a social engineering project to convert India's large population of scooters and two-wheelers into some semblance of modern cars and in doing so combat India's reputation for systemic risk.

Yet, the Nano is more a revolution in cosmopolitan aesthetics and cost-effectiveness than technological innovation. The Nano lacks the robustness of India's fleet of Hindustan Ambassadors to deal with rural roads (Williams, Meth, and Willis 2009, 286). The Ambassador, a model that complied to the company's slogan of 'economy matched with efficiency', was also marketed to India's middle-class as a family car in the 1950s and was a copy of the archetypical British family car, the Morris Oxford. In fact, adverts for the Ambassador Mark 2 eerily mimic adverts for its contemporary the US family car the Model T Ford, presenting it as the 'Big Size Family Car' with 'enough room for six adults – plus an extra large luggage boot'. Compare this to recent ads for the Tata Nano which offer: 'Can you fit your family into the smallest of cars without a squeeze? Now you can' (Figure 1). Yet, the Hindustan Ambassador has continued in production precisely for its robustness – the powerful suspension was well-suited to India's rough roads – and potential for *jugaad*, for jury-rigging by its drivers. The Nano, instead, is aimed at replacing the demand for two-wheelers at a much lower price-point. As Ratan Tata makes clear: 'I observed families riding on two-wheelers … It led me to wonder whether one could conceive of a safe, affordable, all-weather form of transport for such a family' (Tata Motors 2008).

The Tata Nano symbolizes the potential for the *jugaad* ethic (Rice 2008) as 'India's gift to the world' (Datta 2008, 1). It is a gift mediated by India's transnational business elites and the products they wish to see representing them on the global stage. The development of a 'subcompact car' to 'bottom-of-the-pyramid consumers' is part of a new approach to innovation: according to Ananth Krishnan, Chief Technology Officer of Tata Consultancy Services (TCS): 'The *jugaad* mindset is crucial. It's not just jargon' (Jana 2009, 2). These are products made not for

Figure 1. Two images of the family car.

robustness of design and safety but rather as symbols of a 'polished' systematic innovation.

The Nano represents a vehicle that many elites and business interests would like to see replacing the humble, jury-rigged, and unprofitable *jugaads* with which villagers repair, reuse, and 'make do'. The Nano, far from providing a vehicle that can be easily self-repaired, instead embodies the tastes and veneers of the city; a safe, clean, regulated environment – an aesthetic cosmopolitanism that many in the rich world take for granted. At the same time, the Nano attempts to satisfy equally clamorous global demands for low manufacturing costs. Like the Trabant the innovation here is societal rather than technical. As Sunil Malhotra makes clear the Tata Nano follows the company's efforts toward frugal or '*kachra*', meaning junk, innovation; in this case, frugality over safety (2010, 1). Therefore, what lessons might *jugaad* offer for systemic socio-technical change? As a model for 'grassroots cultural innovation practices', the Tata Nano is in fact at odds with the *jugaad* methodology, instead seeking to replace *jugaads* and the systemic risks with which they are associated (Williams and Irani 2010, 2728).

The implications of *jugaad* when analysed from below are mostly discordant with development and contrary to the assumed socio-technical change espoused in ideas of *jugaad* from above. The practices of *jugaad* are equally uncomfortable for export outside of India, for although the practice offers 'fast and cheap' innovation, in practice it manifests as 'making do' in times of resource constraint rather than hyper-capitalism and fast-paced economic growth: as M.S. Krishnan, a Ross business school professor notes, the term implies 'somehow, get it done, even if it involves corruption' (Jana 2009, 1).

While *Jugaad* appears to suggest a process of leap-frogging from grassroots to systematic innovation, the contradictions in the reified understanding of the term

compared to evidence on the ground are of localized responses to poverty rather than innovation. To be sure, a *jugaad* attitude might certainly have aided early entrepreneurs from India on circuits of expertise from India to Silicon Valley. Visionaries like Hotmail founder Sabeer Bhatia displayed robust and resourceful skills in their early careers in the US. In a presentation, I witnessed at an annual TiE event in Sydney, Bhatia reflected at length on how impressed venture capitalists were at his skills in cobbling together working computers from the parts others had thrown away. But the disjunctions between a reified work ethic and practices on the ground make *jugaad* an awkward trend that is unlikely to initiate the systematic innovation in India desired by many commentators.

Conclusion

I have argued here that the recasting of *jugaad* is in part a response to master images and narratives of India as an inherently dangerous and unsafe place. *Jugaad*, rather than being seen as a way of coping with systemic risk, is being interpreted as a sign of latent innovation. From its roots as a local practice *jugaad* has been co-opted and turned into a 'way of living in the global' (Amin and Thrift 2001). The imagined *jugaad* ethic plays upon awareness of over-regulation and risk-averseness in the global economy, both seen as inhibitors of global business and innovation. Nevertheless, these safeguards shield citizens of the rich world from everyday harm, and the distanciation of *jugaad* from dangerous activities threatens to undermine these safeguards globally and perpetuate systemic risk in India. For at risk are not only the innovators (those who jury-rig vehicles), but pedestrians and other road-users who come into contact with *jugaad* in their daily lives.

A crucial aspect of this dialectical recasting is the promotion in recent times – in management, business, and social science literature – of productive values linked to a *jugaad* ethic as part of the promised transition and transfer made possible through 'disruptive innovations'. India's apparent slowness to develop, traditionally subscribed to social and cultural indolence, is now India's lack of national capability for innovation that has its 'origins in Indian society and culture' (Krishnan 2010, 140).[5] In this synopsis, India's heritage, its recent aspirations for socio-technical change, and potential emergence as a future economic power all fortify an alternative history of innovation. The synopsis is justified by real evidence, such as economic growth; as well as soft, cultural, and anecdotal evidence: the successes of India's transnational business elites and the popularity (and cost-effectiveness) of outsourcing for multi-national business solutions. Within this framework, the idea of *jugaad*, of 'crafty' (Das 2005, 51) and 'creative' improvisation, is linked to 'being Indian' (Varma 2004, 72):

> *jugaad*, a form of scientific innovation, represents a suppressed Indian inventive gene … ancient India is replete with the names of scientists and examples of scientific inquiry … Attempting to find rough and ready solutions to problems is a deeply embedded Indian trait. I have no doubt that it is the byproduct of an entrepreneurial attribute that is hard-wired into the Indian psyche. *Jugaad* is, in a sense, the herald of free enterprise … Call it *jugaad*, or see it as a nation wedded to derring-do.
>
> (Nath, 2008, 4–8)

Despite the fact that the evolutionary theory of technological change inherent in the notion of systematic innovation has been considerably undermined (Geels and Raven 2007), the mutual reinforcement that is occurring in ideas of systematic innovation

and cultural values circumvents these assessments. The process agrees with a different agenda; namely, imagining and orchestrating India's economic and technical emergence as a future economic hegemony. The idea that *jugaad*, as grassroots innovation, might perpetuate systemic change belies the fact that the practice of *jugaad* actually exacerbates systemic risk from below.

The idea of using traditional practices, such as a Weberian work ethic based on values such as *jugaad*, to inform development necessitates caution. As Milton Singer highlights they are

> likely, on the contrary, to turn up as sources of 'distortion' in the more general discussion. One of these 'distortions' is the risk of using Weber's thesis as a basis for quick diagnoses of the ideological and structural factors impeding or facilitating economic development, and then translating such diagnoses into policy recommendations for far-reaching transformations.
>
> (1966, 498)

Thus, in this article I sought to problematize the use of *jugaad* in the global management vocabulary on innovation to understand India's own potential for far-reaching transformation. By illustrating 'distortions', I sought to show the dangers of values such as *jugaad* for predicting socio-technical change.

Jugaad's emergence as an Indian work ethic is meant to inform the world of India's potential as a future power and, in turn, its valency as a global débutante. *Jugaad* is thus a prescriptive as well as a descriptive term, featuring uncritically in taxonomies of national, Hofstede-inspired 'behaviors' (Krishnan 2010) that define whole societies in terms of distinct work ethics: Successful executives of global growth companies in emerging economies draw on indigenous cultural values and practices to develop corporate strategies and management practices. Examples include '*guanxi* (China)*, blat, mir* (Russia)*, quan he* (Vietnam)*, ubuntu* (South Africa), and *jugaad* (India)' (Kiggundu and Ji 2008, 80).

The values *jugaad* purports to represent of robustness, creativity, and a 'quick fix' are showcased as remedial for business practices suffering resource constraints. In exchange *jugaad*, if we are to believe its recent advocates in management and business, offers a value-system that informs our understanding of India's emergence as a future power. It is through the contradictions apparent in descriptions of a localized risk management and a global work ethic – of a dialectically opposite 'India Way' (Cappelli et al. 2010) to the one Elwin described – that the imaginings of *jugaad* are exposed as 'distortions' around India's development.

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Notes

[1] 'The Cambridge-trained lawyer (and early president of Congress) W. C. Bonnerjee denounced Hinduism as 'inert, torpid, degenerate, dreaming, in thrall to outmoded ideas, lacking in energy and initiative and doomed to subordination' (Misra 2007, 49).
[2] Scholars including Voltaire, Max Weber, and Max Müller never actually visited India first-hand. Instead, they drew on translations of Indian texts and missionaries' reports as well as classical sources and – in the latter case – contact with Indian contemporaries overseas. This in many ways shielded them from the indigence and poverty – and the climate – that other travelers to India focused on so profoundly in this period, but also curtailed their prejudices.
[3] Srinivas reflects on the practice of villages obtaining contracts for road-work from the government directly, which they then undertook with local spare labour. Thus, localized risk management is a practice that is engrained in India's infrastructure system. 'Giving small contracts to many entrepreneurs may seem more equitable, but the poor living in the villages will pay the cost of the resulting slow progress and the poor quality of the roads' (Panagriya 2010, 407).
[4] Compared to the UK where 'Drivers 4-wheelers' constitutes the largest deaths by road user at 36% (WHO 2009, 215).
[5] Krishnan presents the *jugaad* ethic as a solution to the poor national capacity for innovation due to (H)indolence, which he describes as a 'bhraminical attitude', 'lack of a strong time orientation', 'disdain for physical work', and being 'passive on action' (2010, 136–140).

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