The Enchantments of Infrastructure

PENNY HARVEY & HANNAH KNOX

CRESC, The University of Manchester, Manchester, UK

ABSTRACT This paper addresses the unstable material and social environments that large-scale road construction projects attempt to tame and fix in place as a way of exploring the affective force of roads as technologies for delivering progress and development. Drawing from our ethnography of the construction of two roads in Peru, we trace the disruptive and destabilising processes through which roads come to hold the promise of transformation. We approach roads with curiosity as to their capacity to enchant with respect to three specific promises: speed, political integration and economic connectivity. We suggest that whilst the abstractions of engineering and politics are provisional attempts to demarcate the capacity of roads to bring about the enhancement of international trade, promote the growth of national economies and provide economic opportunity for those prepared to engage with the road’s potential, that these practices alone are not sufficient to explain the passionate promise that roads hold in Peruvian society. We suggest, rather, that the promise of stability is invigorated by mundane engagements with unruly forces that threaten to subvert the best laid plans of politicians and engineers. We argue that such forces are integral to the ways in which roads come to endure as enchanted sites of contemporary state-craft despite their capacity to disappoint and/or the likelihood of generating negative consequences. The political and material process of creating roads, calls forth competing, unauthorised and openly unstable dimensions of being – shifting soils and water courses, side-roads and short-cuts which both challenge and reinvigorate the promises of speed, integration and connectivity.

KEY WORDS: Roads; Infrastructure; Enchantment; Speed; Anthropology

Poseer buenos caminos, es condición primordial para la civilización de los pueblos. (Stahl, 1925)

Possessing good routes, is the primordial condition for the civilization of the people.

La vialidad … cumple un papel importantísimo ya que como parte integrante de un sistema de transporte al servicio de la productividad establece la
Road transport fulfils a highly important role as part of an integrated transport system that services productivity, establishing political and economic links between diverse zones of the country.

La trascendencia que tiene la vialidad como eje propulsor del desarrollo de las naciones es reconocida a plenitud. Si se pretende contar con vías que integren los territorios, que promuevan el aprovechamiento sostenible de recursos, aumentar la producción, productividad y la competitividad de las diferentes zonas de vida, así como impulsar la industrialización y correspondiente comercialización, es indispensable que los territorios cuenten con sistemas viales modernos que posibiliten una interconexión rápida, segura, cómoda y a precios competitivos. (Feasibility Study for the Interoceanic Highway 2004)

The transcendent qualities of road transport as a propeller of national development is well recognised. If we expect to have routes that integrate territories, promote the sustainable exploitation of resources, increase production, productivity and competition of different zones of life, as well as giving an impetus to industrialisation and corresponding commercialisation, it is indispensable that territories have modern road systems that provide the possibility of rapid, secure and comfortable interconnections, at competitive prices.

In contemporary Peru, roads hold a central place in the imagination of state space. For almost a century, roads have been an important means through which a modernist vision of improvement has been enacted by regimes of quite diverse political persuasion. From representatives of the World Bank road building programmes, to the engineers working on highway construction, from regional government officials to people living in the path of proposed routes, there is an overwhelming aspiration which welcomes and encourages roads and road building. In the last decade alone, the World Bank has funded two major rural roads programmes in Peru (Remy Simatovic 2008), meanwhile the Ministry of Transport and Communications (MTC) plans to put over $2000 m into road construction and improvement over the next 10 years. For communities that are awaiting new highways, the importance of roads is such that they often take to the streets, marching or setting up road blocks to demonstrate the passion and urgency in their desire for roads to come to, or through, their towns. A few voices occasionally make themselves heard calling for an alternative perspective – railways rather than highways, environmental protection rather than economic expansion – but even these voices are couched in the uncontestable realisation of the dominant position which cuts across class, ethnicity and locale, that roads are a fundamental necessary and social good.

In this paper, we explore this enthusiasm for roads by addressing them in terms of their capacity to ‘enchant’. Rather than assessing the viability or validity of the social transformation that roads in Peru promise, we draw on the notion of ‘enchantment’ to explore how it is that roads manage to hold competing and often quite divergent hopes and expectations together (Thevénot 2002) to produce a generalised sense of social good to which the majority of people subscribe. In using the idea of enchantment, we follow Bennett (2001) who argues against a notion, prevalent in
much contemporary analysis, that the post-enlightenment world has been characterised by a process of disenchantment (Weber 1958, Blumenberg 1983). Alert to the unexpected, surprising and uncanny dimensions of the world around us, Bennett decouples enchantment from belief in the supernatural or religious phenomena, to recast it as a more generally visceral, affective form of relating to that which is sidelined or cast out of formalised, rationalised descriptions of material and social phenomena. For Bennett enchantment is thus less a form of knowledge or belief and more a ‘mood’, which involves ‘a surprising encounter, a meeting with something that you did not expect and are not fully prepared to engage’ (Bennett 2001, p. 5).

We suggest that the dynamics of ‘enchantment’ so defined, can help explain how roads retain a generic social promise, even in the face of specific circumstances in which they are acknowledged as having failed to deliver.

Infrastructures like roads and railways are in many ways an archetypal technology of post-enlightenment, emancipatory modernity (Mukerji 1997, Collier and Ong 2003, Joyce 2003, Mukerji 2009). Whilst roads have existed in different forms for millennia, the coming together of engineering expertise, political will and economic ambition to produce standardised structures for the purposes of integrating the nation state is a particularly modern ambition, which has morphed and mutated into its current form which we might argue is now deeply influenced by processes of neo-liberalisation (Brenner et al. 2010). As technologies of modernity, roads tend to appear in most accounts as materially obdurate structures which are the outcome of rational processes of planning and design. Nonetheless, as the citations with which we introduced this article illustrate, road building involves a great deal more than simply the execution of a planned process of material transformation. As well as technical expertise, their appearance also requires a force of social and political will which is able to generate and foster the belief that these technologies have a capacity to transform the spaces through which they will pass. Roads are thus not just material forms, but are promises towards a future which is uncertain and unclear (Moran 2009).

In the case of the Peruvian roads which we have been studying, we suggest that there are at least three promises of emancipatory modernity that roads seem to instantiate: the promise of speed and connectivity; the promise of political freedom and the promise of economic prosperity. These promises are in the first instance made meaningful in relation to forms of analysis and argumentation which highlight the specific socially problematic circumstances which roads are intended to resolve. The first promise of speed and connectivity engages the experience of road travel as slow and difficult. Politicians are patently aware that for many people the experience of travel in Peru is to sit atop a petrol tanker that has been converted to take passengers as it crawls along narrow, dusty routes, or to pay a little more to be squeezed into an aged breakdown prone bus that bumps and rolls its way along precipitous mountain passes. Accident statistics on Peruvian roads are high, pointing to the danger of travel on routes which have little in the way of signage or safety barriers and where the condition of the road is poor. Many roads are impassable in the rainy season, becoming blocked by landslides and swollen rivers, and even in the dry season journeys of 300 miles are known to sometimes take 10 days. In some places where river transport is the only alternative, a journey that would take an hour by road takes 12 hours by boat. The slowness of travel appears as a barrier to the achievement of international development goals which stress the importance of connectivity between distributed populations and urban centres where people have access to hospitals, educational opportunities, jobs and markets. It is broadly
accepted that the developmental push for roads is premised on the recognition that livelihoods and life itself are jeopardised by the tyranny of delay.

The promise of political freedom finds its expression in Peru in terms of an aspiration to democratic process as a way to overcome an entrenched history of colonial and post-colonial domination. Roads offer a means of rectifying this history of inequality based on the limited social and physical mobility of peasant communities. Physical connectivity suggests the possibility of bridging the geographical and social gap between a centralised power-elite and an ethnically and racially defined regional periphery. The promise of economic prosperity is articulated as both a collective and a personal quest – road building bringing together the interests of governments and their desire to promote access to global markets with a desire for the road construction jobs amongst members of local communities through which these new roads pass. National ambition for success in international markets and questions of community employment come together once again in projects of regional development whereby roads provide the means for agricultural communities to alter their ways of working and produce more and higher quality goods for new markets.

These three promises – of speed, of political integration and of economic connection – are central to the political force that roads hold within Peruvian society. More than just discursive categories, we suggest that these promises play a central role in bringing the state and its infrastructures into being. As Tsing’s (2005) notion of an ‘economy of appearances’ illustrates, the promises and ideas which circulate with sufficient affective force can have very powerful and profound material effects. In her description of the rise and fall of a stock market bubble, Tsing explores how potential business opportunities are able to enchant, through what she calls ‘dramatic performance’ and ‘spectacular conjuring’. Recounting a shocking incident when a network of scientific experts, businessmen and traders came to convince speculators to invest huge sums of money in what was ultimately revealed as a wholly imaginary gold prospecting venture, Tsing tells a cautionary tale of the power of the plausible. Likewise, the promises associated with roads can also be recounted in terms of their illusory plausibility.

Focusing on the discourses of politicians and construction companies, it is easy to be cynical about the way in which projects of infrastructural transformation appear to be enacted as the material instantiations of dominant narratives regarding the ideal shape of an uncertain future. However, as Humphrey has pointed out in her study of infrastructural developments in post-soviet Russia, the material presence of infrastructural forms complicates the notion that political ideology is prior to, and thus simply inscribed in the infrastructures which it produces. Rather for Humphrey, infrastructures are better thought of as a ‘disturbance in a causal milieu, the material entity which motivates interferences, responses or interpretations’ (Humphrey 2005, p. 43). Using the contemporary Soviet literature to explore the power of architectural forms to mobilise and materialise communal ideals in post-revolutionary Russia, she aims to show how infrastructures not only shape human action in intended ways but also refract and send ripples through the possibilities of discursive interpretation and representation of social life. Infrastructures do not simply reference or represent political ideology but actively participate in often unexpected ways, in the processes by which political relations are articulated and enacted. Infrastructures can offer a vital means of tracing the co-emergence of political and material histories, and in doing so can provide powerful accounts of often unacknowledged dynamics of state formation (Mukerji 2009, Collier 2011).
Likewise, what Bennett’s (2001) treatise offers us in this regard is a call to turn attention away from enchantment as that which lies in the rhetorical ploys of political actors or the ignoble actions of naive scientists and their solidification in infrastructural form. Bennett sees an attention to enchantment as a way of moving beyond a position of professional cynicism towards the forces that appear to construct the worlds within which we live, in order to recover other ways of sensing how the features of modern life become the subject and object of meaningful relations:

my counter story seeks to induce an experience of the contemporary world, a world of inequity, racism, pollution, poverty, violence of all kinds – as also enchanted – not a tale of re-enchantment but one that calls attention to magical sites already here … the marvelous erupting in the everyday. (Bennett 2001, p. 8)

Humphrey’s call for a move away from studies that attempt to locate the power of designed infrastructures in their intended or unintended ideological effects, and Bennett’s call for an attention to moments of experience which we might re-describe as ‘enchanted’, encourages us to reconsider the way in which infrastructures engage the three promises which we have identified in a way that goes beyond the conjuring trick which Tsing describes. In asking us to pay more attention to the situated moments wherein infrastructures impinge on social relations, and the unsettling, affective and ‘marvelous’ dimensions of these relationships, these writers encourage us to reconsider the enactment of infrastructural promises from more grounded and mundane perspectives. Taking each of the three promises in turn, we attempt in what follows to engage infrastructural relations as moments of enchantment in ways which add texture and depth to our understanding of the way in which infrastructures like roads generate their powerful affects of social promise.

The examples which follow are drawn from an ethnographic study that we conducted between 2005 and 2008 of two roads in Peru. The first is the Iquitos-Nauta road, a highway in the North of Peru that has been under construction for the last 70 years and was finally asphalted and opened in July 2005. The second is the Interoceanica del Sur – specifically a 700 km stretch of the interoceanic highway that has been widened and asphalted over the past four years and at the time of writing this paper is nearing completion. Both of these roads were presented to us as sites of excess and disturbance, yet these forms of engagement and liveliness which characterised the entire process of road construction were largely written-out of celebratory discourses of the potential of roads as an infrastructural form (Harvey and Knox 2008). In what follows, we argue that it is not in spite of unruly processes that infrastructures emerge as a form of social promise, but rather that it is through the experiences of life within and alongside unstable forces that infrastructures gain their capacity to enchant.

The paper traces the excesses and sites of unruliness and abandon by returning to the three promises that we have identified as characterising the enchantment of roads in Peru: the promise of speed; the desire for political freedom and the possibility of economic circulation. For each of these aspects of ‘enchantment’, we turn our attention to the relational engagements that are consistently excluded in dominant narratives regarding the promises that infrastructures put in place. These include ethnographic moments when infrastructures seem to threaten to collapse, fall apart or be at risk manifesting fragility and material uncertainty. By tracing the articulations of ambigu-
ity, unease, disquiet and worry at each of these junctures of infrastructural promise, we hope to reveal some of the commitments and the relationships that these dimensions of infrastructural form demand and produce, and in doing so to illustrate their importance to the capacity of infrastructures to enchant. At the end of the paper, we consider what our argument might imply more generally for the study of enchanted infrastructures.

The Enchantment of Speed

It was nearly two o’clock when the pick-up truck rolled off the small barge which ferries cars and lorries from one side of the Rio Madre de Dios to the other. It had not rained for several days and the road ahead had been compacted into hard red mud. As we drove out of the village and onto the open road, our driver began to put his foot down and the car picked up speed. With no other vehicles ahead or behind us, we must have been going at 70 or 80 mph. The road surface was ridged and uneven and the churned up mud left over from past rain showers was now encrusted into shallow gullies which caught the tyres of the car, sending us swerving and forcing our driver to pull the car straight again as he braked, and then off we sped again. The rush of the wind and the whipping past of the tangle of green were exhilarating if a little unnerving, a rare chance to experience the thrill of speed on a stretch of road that was notorious for its impassability for most of the year.

The pick-up truck we were travelling in was owned by the engineering consortium which had been contracted to widen and asphalt a 700 km stretch of road between the Peruvian highlands and Peru’s border with Brazil at the town of Inapari/Assis. Rushing along this stretch of road, we were reminded of a PowerPoint slide which we had been shown early in our fieldwork. The slide had contained a short animation which illustrated, in simplified terms, the engineering options available for widening a mountain stretch of road. Showing a cross section of mountainside, the animation depicted the carving away of a slice of mountainside on one side of the road, the building up of a platform for the road on the other side and the various layers of material which would be needed to make a solid asphalt roadway. At the beginning of the animation, which illustrated things ‘as they are now’, the image of a fuel truck had been pasted onto the road. Fuel trucks are notorious for being slow cumbersome vehicles which slowly but steadily make their way up and down the unpaved road. By the end of the animation, the fuel truck had been replaced by a state of the art container lorry and a yellow convertible sports car.

As Virilio (1986) amongst others has noted, contemporary forms of governance are premised on a pre-occupation with speed. Virilio argues that the modern nation state, whose emergence he traces to the political manoeuvrings which took place in the years preceding the French Revolution, engages a form of politics which is centrally concerned with both ensuring the mobility of its populations, and managing the dangers of a population set free via speed. Roads, in Virilio’s terms encapsulate both the dream of circulation and flow upon which economic, political and military success is premised, and a realisation that the power of populations to counter that state depends simultaneously on their capacity for speed.

Certainly, the discourses which circulated in state documentation and amongst government officials regarding the benefits that roads would bring to populations in Peru, and the mechanisms of control which it was predicted that new roads would
bring into play, were centrally preoccupied with benefits and dangers of speed. Speed would provide the means of resolving deficiencies in economic flow, in access to health care and in educational standards. At the same time, much would have to be done to ensure that the benefits of speed were not outweighed by the dangers of crashes and accidents. The material conditions which were needed to generate speed as a properly inculcated form of state intervention included well-calibrated curves, flat road surfaces made of durable substances and safety measures such as crash barriers and road markings which would make the road navigable at a pace indicative of an appropriate modernity – both ordered and free. Bringing about the effect of such ordered freedom involved an engagement on the part of engineers with forces and materials which they were at pains to control. It is to these engagements that we now turn.

Some months into our fieldwork, we were introduced to a road engineer who we will call Jaime Rey. Rey had worked on the Iquitos-Nauta road, and we asked him to tell us about the challenges they had faced in building the road. He immediately launched into a tirade about the obstacles that he had faced during the construction process. The initial challenge had been to figure out a way to find and commandeer large quantities of stone to reinforce the clay soils of the rainforest. Conversations with engineers who worked on the Iquitos-Nauta road invariably began with remarks about the challenge of working in a stone-less environment. Stone was the starting point for stabilising the road, and turning the sticky clay into a surface that cars would be able to travel on, the first stage in what Rey called the ‘domination’ of the earth. Its absence permeated the engineers’ sense of the instability of the land which it was their job to make secure.

In his famous essay on technology, Heidegger invokes the idea of the ‘standing reserve’ to describe the way in which nature is made to appear as a resource for human exploitation (Heidegger 1977). Described as a ‘technological revealing’, the relationship between a technologically framed way of being-in-the-world and the presentation of that world to the human imagination is explored. Certainly in terms of the abstractions of engineering science which parcelled the land up into quarries and dumps and categorised materials as useful or not for the purpose of building a road, the earth was indeed cast as a standing reserve. Yet at the same time, for road builders, these abstractions were always practically engaged, in the day-to-day work of building the road, through a much more embodied relationship with the enchantments and frustrations of material processes.

Thus, the search for stone was not simply a matter of sourcing a suitable building material but was presented to us as a series of careful negotiations with local populations who owned the land on the side of rivers way upstream, who had quickly clocked onto the unlikely economic value of their river beds and to the slow flow of the river Maranon which would carry the stone down to the road construction site on the back of heavy and cumbersome barges. The story of bringing stone to the road was told to us as a tale of achievement against the odds, whereby the environment was characterised not by a passive act of offering itself up to the technological imaginary but by a recalcitrance that needed flexibility and guile to overcome.

This mode of engaging the natural and social environment continued throughout the construction process. One engineer took great pleasure in showing us photos of particularly dramatic moments he had encountered during his involvement in constructing the Iquitos-Nauta road. In one photograph which he took from the back of a pick-up truck, the road is immersed in several feet of water and the truck he is in
is being pulled along by a tractor. In another picture, a mud-encrusted bus is stranded askew in the middle of a slippery brown expanse. When we visit a roadside village one day after a heavy rain shower, we discover for ourselves the way in which the mud impinges on movement. Crossing a field usually used as a football pitch, the soles of our boots became stuck to the mud and we had to grab hold of one another as we tried not to fall over and move awkwardly to more stable ground. By the time we reached the edge of the field, our soil encrusted feet felt like leaden weights. It is perhaps unsurprising then that the engineers working on this stretch of road described their experiences as one of a constant battle with the elements. Land and water were not just numerical categories subjectable to rational analysis but were engaged as active substances with which engineers were caught in a game of second-guessing and persuasion. Despite analyses of water flow around the vicinity of the road, the engineers found that when they started to move the earth in order to install the necessary drainage, new springs would suddenly appear in places where there had been none before. The retaining walls that had been built on some stretches of the road had been carefully calibrated according to the loads they were expected to hold back, but to the engineers’ frustration the walls had soon cracked just weeks after being erected, becoming twisted as if they were subjected to forces of gyration that mathematical analyses has failed to detect. As engineers negotiated an engagement with these unpredictable movements, their relationship with the environment took on a decidedly affective and negotiated mood, with the earth and the substances from which the road was being built taking on an increasingly anthropomorphic guise as variously capricious, resistant and exhibiting distinct likes and dislikes.

In a similar vein, the people who lived and worked in the vicinity of the road building programmes were also cast in a somewhat ‘enchanted’ light. These were not the docile citizens of a political imaginary ready to be propelled into a new speeded up future, but complicated, contradictory and awkward populations who seemed, in the eyes of the engineers, to be doing their best to derail the road building project at the same time as they proclaimed a desire for the road to be finished. Rey told us, not without a hint of irony in his voice, that these road workers and people living along its edges were ‘salvajes’ – savages. If nature was temperamental but tolerated, these ‘savages’ were downright exasperating. To explain his frustration with the ruinous activities of people with regards to the road, Rey related to us the problems he had with his ‘geomalla’ – a high-tech webbing that was being used for the first time in Peru in this construction project. Concerned that it be looked after properly, he and his colleagues had built a shelter to keep it dry and posted a guard outside to keep it safe, but the guard fell asleep and the ‘geomalla’ was stolen. The next thing he knew, as if by magic, his ‘geomalla’ started appearing as chicken-pen lining in the battery farms along the road. When Rey finally started to use the geomalla for the job it was intended – to stabilise the mud and prepare the surface for the sub-base and base – there were further problems. A special machine called an esparcidora (a spreader) had been brought in from Brazil to help lay the webbing on the ground, but it had grooved wheels that tore up the webbing as it reversed over it. The volcete (dump truck) driver also then drove over the webbing destroying it further. The drivers did not realise the importance or the cost of the geomalla, nor did they notice the damage they were doing to it. Rey was upset, recounting, ‘el volcete y el otro miserable destruyeron mi geomalla’ (the dumper truck and the other miserable idiot destroyed my geomalla).
The series of obstacles besetting the road construction process was invoked in these descriptions as more than a series of contingent events. Rather these happenings seemed to coalesce into a pervasive sense that there was something about these marginal spaces of the Peruvian rainforest that conspired to upset the plans of rational engineering science. In this respect, unruly landscapes and citizens should not be seen as simply that which remains unmanaged or un-contained, but rather, we suggest, collectively they culminate in a haunting encounter (Gordon 2008) with that which should have been overcome in the clean vision of a working road space. To recognise the instability of people and land is to acknowledge the achievement of containment whereby those aspects that constantly threaten a return to halts, delays and interruptions have (momentarily) been subdued. The way in which the building of the road produces the effect of speed as a mode of enchantment through these relations of containment is necessarily excluded by those studies which concentrate on the effects of infrastructural forms as having a direct determining relationship with speeding up the experience of life through the establishment of connectivity. Indeed we should remember that for many people living along the route of new roads, the appearance of a new highway often accentuates their disconnectedness from channels of communication. Like the fetishised commodity (Marx [1867]1974), a finished road which appears to offer speed and connectivity makes invisible or seemingly unimportant the conditions of its construction. What we have suggested is that the promise of speed operates as a seductive force by feeding on the experience of doing battle with certain kinds of sociality and materiality which are perceived as resistant to the future that the road can deliver. It is in those moments when these technologies of modernity appear to overcome the multiple forms of material and social resistance that the enchantment of a smooth and functioning roadway is vividly experienced. Outstretched ahead a clean black snake of asphalt, recalls the promise of the PowerPoint presentation, when any minute, a container truck or better still a yellow sports car might appear around the corner.

Enchantment of Political Integration

The picture on the TV screen buzzes and flickers as the videotape rolls. Daniel, a journalist, is stood in the middle of the road. Picking up chunks of asphalt that collapse into crumbs through his fingers, he throws them back onto the ground in disdain. The video was taken during an interruption in the road building process, when a previous construction consortium were in court under charges of corruption and the section of road that had actually been built was literally falling apart at the seams. As music plays in the background to the video, Daniel looks directly at the camera and implores his audience, ‘Coperativamente nos preguntamos por qué ahora no hay presión a la empresa que está a cargo de la ejecución para aceler la obra? Donde están las autoridades regionales, locales, nacionales y los dirigentes del frente patriótico?’ (Together we must ask why is there is no pressure on the company that is responsible for the works to speed up their work – where are the regional, national and local authorities or the bosses of the frente patriótico?). Taking on the role of representative of the people, Daniel invokes a common narrative, of disillusionment and disempowerment in the face of bureaucratic control, fraud and corruption.

Roads are supposed to be technologies of integration. As the citations at the beginning of this article illustrate, the building of roads in the history of Peru has always involved the possibility of an integrated, national territory, embracing the
imagined singularity of a polity which would hold together as one in the face of external demands from international markets, and the threat of internal divisions from recalcitrant populations. Road construction programmes engage this narrative quite directly. At the same time as being physical mechanisms through which a territorial state might be achieved, the necessity of state involvement in their construction is also central to the way in which they operate as technologies for materialising state presence in people’s lives (Harvey 2005, 2012). As we noted in the introduction, public highways cannot be built without the intervention of governmental, and now, intergovernmental bodies. Their appearance across the world is the outcome of complex negotiations over capital funding, routing, contracting and future management (Merriman 2005). Politicians in Peru are keenly aware of the way in which infrastructural projects help to evidence the often invisible work of state actors, with road building projects often hailed by presidents as symbols of their contribution to the nation state.

In this respect, the enchantment with the road as a source of political cohesion is quite unlike the enchantment of American speculators with distant gold markets that Tsing (2005) recounts. Whilst Tsing reveals the illusion of the gold deposits to be a fabrication made possible by the norms of speculation characteristic of economic markets and media reporting, roads demand the grounding of political and economic promise in the material presence of a completed infrastructural form. In this light, Daniel’s presence in the middle of a crumbling road operates as an appeal to a recognition amongst his audience of the quality of their mundane encounters not just with crumbling infrastructures, but with a fragmented state (Graham et al. 2001). The case invokes an awareness of all of those extended relations which have failed to cohere to produce a tangible material infrastructure. This in itself might be a kind of enchantment – not just with the state (Coronil 1997, Taussig 1997), which appears as failed or disintegrated, but in the possibilities for action in the face of disintegration.

As the clod of asphalt hits the ground and shatters, Daniel’s report cuts to an abandoned industrial plant at ‘20 km’, owned by the latest in a line of contractors but neglected because the company is ‘en juicio’ (in court) whilst corruption charges against the consortium are investigated. The consortium that is being investigated is not the first to be brought up on corruption charges and no one is that surprised that the road has served once again as a site for fraud and theft. During our research on the Iquitos-Nauta road, we were often told that this was the most expensive road in Peru due to the amount of money that had been stolen during the course of its construction. Sighing, Daniel stands in front of a scattered array of abandoned machinery. The plant is overgrown and overrun with weeds, animals are living in the geomalla and grass is growing out of the piles of stone. A guard has been posted to make sure no one touches this decaying material as long as the court case holds it and its owners in a state of suspended animation, cut adrift from the possibility of corporate management or local re-appropriation. As Daniel addresses the camera once again, he talks about the abandoned plant as a localisation and instantiation of that which cannot be known and controlled – ‘Este es una zona deshabitada y que realmente guarda muchos secretos y que aún es un misterio que falta por resolver’ (this is an uninhabited zone, genuinely holding many secrets, as it continues to be an unsolved mystery).

In this news report, and more generally in the critical and interested attitude of the population towards the condition of the highway, the physical disintegration of the road becomes a stark reminder of the ongoing limits of political integration
where people have been forgotten by political process. The materiality of the instability of the road indexes the instability of the conditions that Nauteños in particular, and Peruvians in general, sense that they are living in. We are told how Nauteños have fought for this road for 70 years, watching as successive governments have promised its completion and failed to fulfil their promises. Although the road is now built, there is still ambivalence as to whether this means that they are experiencing political integration. The taxi drivers that ply the hour and a half route between Nauta and Iquitos complain that this is not only ‘la carretera más cara del mundo’ (the most expensive road in the world) but it is also ‘la carretera más fea del mundo’ (the ugliest road in the world). Even on the parts of the road that are ‘finished’, the technical solution to mix asphalt with sand has produced a road surface that for the taxi drivers is like sandpaper that wears away their tyres. This is in addition to the disintegration of the road that everyone seems to notice. It is not like the coast, one taxi driver complains. Later, he tells me this would never happen in the USA. Somehow, someone has failed them. They have their road which promised so much, but still they find themselves left in the ‘space on the side of the road’ (Stewart 1996).

Yet out of the mystery of the plant and the disillusionment with the failure of the road to fulfil its integrative promise, we can perhaps discern the seeds of mobilisation and re-engagement. This ambivalence that disintegrating materials do so well to index, appears to rest on a hope that there is the possibility of change and that political institutions are the places where that change needs to occur. In this respect, the encounter with processes of material disintegration produce a ‘mood’ of unease and disquiet about the capacity of the state to perform its role. At the same time, it is in this challenge and this anxiety that we find conversations and the interventions that re-make the state anew, an enchantment that re-imbues it with the power to change lives for the better.

**Enchantment of Economic Connectivity**

On the interoceanic highway, behind the village of Limonchayoc in the foothills of the southern Andes, lies an abandoned bridge. To get to the bridge, you must turn off the main road and proceed down a narrow track where cows graze in fields on either side, and a wooden gate is fastened shut across the path. The bridge is not even visible from the track, and it is only when you get out of the car and follow a line of trampled-down grass into a thicket of trees and bushes that the rusting iron structure becomes visible, looming upwards out of the shadows of the undergrowth. A makeshift wooden stepladder covered with moss allows access onto the suspension bridge which spans an impressive 50m or so across a wide ravine. Slats of wood are hung horizontally from the thick swooping cables of the bridge with twisted wires to make a swinging set of rungs along which planks have been placed to make a narrow path along one edge. The fragility of the suspended footpath is accentuated by the hulking concrete bases on either side of the river out of which the iron structure rises. Though held together now by wood and wire, this structure was evidently a major engineering feat at the time of its construction.

Although our drivers assure us that the locals still use the bridge as a footpath, we decide not to take our chances and choose not to cross its rickety structure. Later, piecing together bits and pieces from archives and conversations, we find out that the bridge in Limonchayoc was a remnant from the last major push to improve
the interoceanic highway, which took place in the 1980s during the government of Fernando Belaunde Terry. That too had been a project oriented towards economic development and social improvement. The history of the building of this road reveals a long running desire for economic expansion through a logic of connection. The building of what is now being termed the ‘interoceanic highway’ has proceeded since the 1930s in waves of state-led activity for different ends. Initially built as a means of connecting agricultural communities to urban markets, later programmes of road building developed the highway from the Andean highlands into the rainforest under the hope that it would operate as a ‘carretera de penetración’ (a penetration road) which would provide access to the land and resources of Amazonia. A wave of road building activity in the 1960s was accompanied by colonisation projects which aimed to mobilise land settlement for new forms of agricultural production and resource extraction (Llosa 2003). The most recent push to open up the road as an interoceanic highway shifted the logic of connection from one of resource extraction to one of resource flow between nations. As well as providing a pathway between communities on either side of a fast flowing river then, the bridge at Limonchayoc stands as a reminder of the ways in which past projects of social and economic connection have produced not only the channels along which resources flow, but also the edge-lands where those flows are reduced to a trickle and people work to collect and channel the residues of past projects of national transformation. Here, people speculate on the pasts that could have been and the futures which might have come their way.

The uneven history of this road and the shifting promises upon which it has been brought into being is indexed along its length by ruins like that at Limonchayoc. Further down the road at Quince Mil, we visit an abandoned airport whose heyday came prior to the arrival of the road, when the town was at the centre of a gold rush. An overgrown pathway marks the site of the old town, which has since moved up from the river to the road, where roadside restaurants pick up passing business from people passing through. We pass heavy machinery with Cyrillic lettering on the side, remnants of the days when a Russian colony existed in the area, and are taken to the ramshackle shells of former mansion houses. What is striking is the way in which these former frontier economies sit side by side with the current waves of migration and economic extraction taking place along the road. With the crash in global stock markets coinciding with the widening of the road, thousands of people have come to the area in the past few years to take advantage of the high price of gold by trying their hand at gold panning. Others take advantage of the relative inaccessibility of the jungle and the limited amount of traffic on the road to engage in illegal and semi-legal logging. Whether the means through which people are making a living out of the new connections that the road makes available are legal or not, the ruins of past economic boom times is a constant reminder of the fragility and reversibility of the promises upon which infrastructural projects are based (Figure 1).

A little further down the road is another bridge. Puente Fortaleza is a fully functional bridge and a key strategic point in the building of the interoceanic highway as it marks the borders of three administrative departments: Madre de Dios, Puno and Cusco. As part of the interoceanic highway project, the bridge was recently refurbished. Finally after years of waiting, the road leading from the highlands to this point and from here to the border with Brazil has been widened and asphalted providing a connection which is both useable and potentially economically viable.
Yet it seems that the bridge at Limonchayoc holds an important lesson in warning against complacency in the belief in the obduracy of infrastructural forms to bring about imagined futures. Look closely at the walls of the houses near to Puente Fortaleza and you will see notices pinned to them calling people to a public meeting to discuss the construction of a hydroelectric dam in precisely this spot. So successful, it seems, has been the collaboration between Peru and Brazil in (almost) achieving an interoceanic highway, that now even more ambitious infrastructural plans have been set into motion. Plans are underway to develop a massive hydroelectric plant which, whilst providing power to millions of Peruvians and Brazilians, will also, ironically, flood the road whose relations we might argue have produced the conditions to bring the power project into being.

Figure 1. Map of the interoceanic highway.
Looking at the Fortaleza bridge, an obdurate infrastructure whose solidity in relation to the road seems so compelling and tangible, we wonder whether in years to come it too might end up a rusting hulk hidden behind the undergrowth in the wake of another infrastructural deviation. Bridges like the one at Limonchayoc are a salutary reminder of the fragility of economic histories and the uncertainty of futures for us all. Like the instabilities which are overcome to produce speed, and the fragmentation which provides a resource for political mobilisation towards a dream of integration, these affective reminders of the possibilities of decay, both inflect promises of accumulation with a reminder of former boom-times and reinvigorate attempts to navigate a shifting terrain to make capital accumulate, in however small or temporary a way, to people and the places in which they live.

**Conclusion**

The processes by which rational projects of technological development are able to enact their promises start to become more comprehensible when we begin to pay attention to the affective engagements which accompany developmental processes. Infrastructures can dazzle with the possibilities they hold – the glitter of progress, the lure of profit, the promise of circulation, movement and a better life as rational and scientific plans – interlocking diagrams of modernity (Ganokar and Povinelli 2002) – generate illusory effects supported by numbers, figures and pictures. But, we have suggested, these figures alone do not do the work of enchantment that infrastructures often seem to produce. If the facts, or what Latour has called ‘factishes’ (Latour 2010), produced by corporations and politicians, were the only means by which populations could be enthused into the benefits of infrastructural forms, we suggest that cynicism towards the conditions within which facts are produced and the interests of the worlds in which they circulate would be sufficient to render them incapable of inculcating the enchantment which we have recounted in this paper, particularly when so often the infrastructures concerned fail to deliver on their promise, and in some cases fail to materialise at all.

Instead, we have turned our attention to those aspects of engagement that the dazzle of the promotional and celebrational form blinds us to. Here, we find that people do not necessarily get to move faster, and engineers do not necessarily get to work faster in and around these new infrastructural spaces. Navarro-Yashin suggests that ‘processes of transnationalism which supposedly promote mobility and flexibility also engender the opposite: immobility, entrapment, confinement, incarceration’ (Navarro-Yashin 2003). For Navarro-Yashin, such dimensions are not exceptions to globalisation but very much a part of it. Similarly, we have suggested, following Bennett (2001), that the commitment to the promises of infrastructural form also emerge out of the mundane and day-to-day enchantments through which the possibilities of collapse, of dereliction, disintegration and abandonment are engaged. It is through an articulation with the lived, material encounters of stasis, rupture and blockage that infrastructural promises become reinvigorated and recast. The rhetorical narrative force of the developmental promise is thus amplified by those material engagements that reinforce the desire for infrastructural forms to contain unruly forces (human and non-human). The constant deferral of such containment may end up diminishing people’s faith in the ability of governments and of experts to deliver suitable material forms, but it strengthens the desire for them and constantly renews the sense that sometime soon they will appear and life will change for the better.
Notes


2. Examples include road protests in Bagua, northern Peru in 2009 regarding the social and environmental impact of oil exploration, and protests between indigenous groups and the national government in Bolivia in 2011 over the potentially disruptive effects of another interoceanic highway proposed to traverse Bolivia.

3. In 2008, accident statistics showed that there were 50,059 injuries and 3489 deaths in Peru which has a population of 29.5 m (Sagástegui 2010), although the authors of this report point out that accurate data on road accidents is not currently available in Peru.

References


