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Including health in environmental impact assessments of three mega transport projects in Sydney, Australia: A critical, institutional, analysis

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A B S T R A C T

This article details how health impacts came to be assessed in three mega, billion dollar, transport infrastructure projects, two road tunnels and one light rail, in Sydney Australia. The known health impacts of transport decisions include environmental, behavioural and social factors. EIA practice prioritises environmental risks, and there has been scant attention to understanding why this is persistently the case. Here we provide a critical theory lens, using critical realist methodology, to analyse empirical data collected through interviews and documents for the three cases. Our analysis focusses on EIA practice within its institutional context, building on ‘new institutional’ approaches to policy analysis that emphasise actors (the stakeholders involved in the EIA), structures (the ‘rules of the game’ that influence practice in systems), and power. We find that the various actors engaged in the EIAs principally to address particular goals that were pre-determined by the system in which they worked or belonged. Structurally, each EIA was undertaken as a compliance process relatively late in the planning process. Considering project options was not part of the EIA’s purpose. Resources to undertake the EIAs were provided by those funding the projects (“the proponents”) and determined the types of issues to be considered. The full range of links between transport and health were not identified. Concerning power, health impacts were considered through inter-professional technical negotiation. The inability to engage in the fundamental options driving projects meant impacted communities questioned the validity of the EIA, and the health assessment within this. Our institutional analysis provides important knowledge about how the EIAs preferred a focus on specific health risks to the detriment of the known broader determinants that shape the health impacts of transport.

1. Introduction

1.1. The problem of transport infrastructure, EIA, and health

Effective planning for transport infrastructure is a critical public policy issue internationally. The sheer size, scale and monetary cost of many transport infrastructure projects underscore the importance of these investments for the health and wellbeing of current and future generations.

Evidence of the health impact of transport policy decisions is well documented. Crucially, there are direct links to risks from changes to the physical environment (air, noise and climate risks for example), indirect links to the determinants of health including access to services, social connections, and opportunities for physical activity, and to the

differential distribution of these impacts across populations (Giles-Corti et al., 2016).

The health impact evidence base is descriptive and has developed largely in the absence of a deep understanding of the procedures that inform major transport decisions. Environmental impact assessment (EIA) is one of these procedures (Harris et al., 2015a, 2015b). EIAs are legislated requirements in the majority of countries in the world to identify and predict potential impacts of a proposed development, and, where appropriate, make recommendations to mitigate the potential harmful effects of projects (Morgan, 1998; Glasson et al., 2013).

Previous research has tended to focus on the technical inclusion of health in EIAs. This has consistently demonstrated a focus on health risks from environmental triggers, and comparatively limited consideration of the wider determinants of health (Harris et al., 2009).

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Some health focussed analyses suggests that EIA is a process bedevilled by unassailable limitations (Cole et al., 2004; Barton and Grant, 2008; Weston, 2010). Others argue that EIA remains an important opportunity to ensure planning for these projects fully considers health implications: environmental, behavioural, and social (Bhatia and Wernham, 2008; Cave et al., 2017; Harris et al., 2015b).

In Australia, the setting for this research, there is a tendency in EIA to preference health risk assessments as opposed to health impact assessments (Harris and Spickett, 2011). Further, in New South Wales, the jurisdiction of focus for the research, health does not feature in the legislation governing EIAs (Harris et al., 2015a) and thus health assessments are not required. We have previously found that the technical content of three transport infrastructure EIAs we analyse further here was insufficient given the known evidence base and established ways to consider health in an EIA (Riley et al., 2017). For this paper we unpack why this occurred, explicitly taking a critical lens (Cashmore, 2004; Richardson, 2005; Weston, 2010).

The last 20 years of investigation have shown room for improvement in the practice of EIA and infrastructure approvals (Flyvbjerg et al., 2003; Flyvbjerg, 2014), including limitations concerning health impacts (Barton and Grant, 2008; Carmichael et al., 2013). Rather than rejecting EIA (Barton and Grant, 2008; Weston, 2010), we use a critical lens to understand why the practice of including health in these three EIAs happened in the way it did, what was good about this, and what improvements are required.

The research question we address in this article is:

‘What were the main influences behind how health was included in the EIAs of three major transport infrastructure projects in Sydney, Australia?’

1.2. An institutional, political science, approach to understanding EIA practice

Historically, EIA research has demonstrated that to be fully understood EIA practice needs to be investigated as nested within complex political decisions and planning processes (Taylor, 1984; Bartlett, 1989; Bartlett and Kurian, 1999; Cashmore et al., 2007; Morgan, 2012). Crucially, this literature shifts research away from a rational-deductive model to one that accepts EIA sits within complex policy and decision making institutions. Health focussed EIA research has yet to catch up with this, although there are movements in this direction (Kågström et al., 2013; Harris and Haigh, 2015; Kågström and Richardson, 2015).

There is a long history in political science of analysing the complex conditions that surround policy-making (or specific interventions such as EIAs). This type of analysis belongs to the broader body of work called ‘new institutionalism’ (Hall and Taylor, 1996; in the EIA literature see Bartlett and Kurian, 1999). New institutionalism can be boiled down to core theoretical constructs that overlap but are, crucially, also analytically discrete (Harris et al., 2015a): ‘structures’ (institutional ‘rules of the game’ that influence practices within systems), ‘actors/networks’ (the stakeholders involved, their values and positions), ‘ideas’ (the content of policies that actors and structures produce) and ‘procedures’ (the processes used to make policy).

Table 1

Parameters of the three NSW transport infrastructure cases.

	NorthConnex	CSELR	WestConnex (M4 East)
Project type	Road	Light Rail	Road
Project description	9 km-long tolled motorway tunnel located in north Sydney	12 km-long light rail project in central Sydney	Motorway scheme, including a tunnel, in central Sydney
Cost (Au\$)	3 billion	1.6 billion	16.8 billion
Funded by	A Public Private Partnership between the Australian Government, New South Wales Government and Transurban	A Public Private Partnership between the New South Wales Government and the Connecting Sydney consortium	Australian Government and New South Wales Government
Commencement date	2015	2015	2016
Expected completion date	2019	2019	2023

EIA research over the past decade has mixed analysis of actors, the systems to which they belong or work within, and the values, goals and frames that are brought to an EIA (Elling, 2009; Kågström and Richardson, 2015; Soria-Lara et al., 2016). There has also been explicit focus on power (Richardson, 2005; Cashmore et al., 2010; Cashmore and Richardson, 2013). A third line of inquiry, not yet articulated in the EIA literature, helps explain what it is about structures that influences actors, including power (Archer, 1995). Archer’s emphasis concerns the resources and rules that constrain or enable actors to negotiate their views and positions. We approach these three positions as a continuum to inform our thematic analysis of why health is included in EIAs.

2. Methodology

2.1. Critical realist methodology

The research is part of a larger investigation into the NSW Planning system (Harris et al., 2015a) using a critical realist research approach (Bhaskar, 1978, Danermark et al., 2002; and see Cashmore et al., 2008 in the EIA specific literature).

This realist approach has gained recent popularity because it differs from both positivist approaches – deductive data analysis to test the parameters of specific theories – and constructivist approaches – inductive data collection and analysis not testing a specific theory – (Sayer 1992; 2003; Bhaskar, 1978; Danermark et al., 2002). Realist approaches allow a third methodology that combines, iteratively, inductive and deductive analysis to develop explanations of what happened, for who, and under what circumstances and takes account of context. We initially collected and analysed data using ‘new institutionalist’ categories that have consistently been shown to underpin the essential characteristics of sub-systems involved in public policy: actors, structures, and ideas (Cairney, 2011; Howlett et al., 2009). We then took that analysis and reinterpreted it using relevant theoretical constructs from existing EIA literature, supplemented with the work of Archer.

A particular aspect of our analysis has been teasing out the mechanisms that caused health to be included in the EIAs in the way that it was. Crucially these mechanisms are usually hidden, sensitive to variations in conditions, and causally linked to the occurrence of events or outcomes (Sayer, 2000).

2.2. Case study design

The research followed an in depth multiple case study design following Yin (2009), focussing on how and why phenomena occur, where each case demonstrates or uncovers findings which are replicated or not in other cases (ibid). Each case (see Table 1) was developed and then compared for replication purposes in terms of similarities and differences. Therefore, we included cases with similar and different contextual conditions using the following inclusion criteria:

- The project being assessed has major transport planning

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