



Original Article

Do coal-related health harms constitute a resource curse? A case study from Australia's Hunter Valley



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ABSTRACT

The term 'resource curse' was coined to describe the phenomenon, usually associated with developing nations, that occurs when the costs and harms of extracting and exporting natural resources outweigh the economic benefits. We argue that this applies to developed countries as well as developing countries; at the local not only national level; and that the magnitude of the associated health burden warrants the inclusion of health in resource curse theory and discourse. With coal mines and power plants in close proximity to human habitat and pastoral land, Australia's Hunter Valley provides a natural laboratory for exploring these issues in local coal mining communities. We identified literature from the Hunter Valley and compared the findings with the international literature on the resource curse using an existing framework which covered (i) socio-economic, (ii) political and (iii) ecological issues, and adding (iv) health as the fourth component. Despite some variations and knowledge deficiencies there was considerable congruence between the Hunter Valley and the resource curse theory. Effects reported, and mechanisms by which they are promulgated, substantively reflect many aspects of the resource curse literature. Further, the extent and economic impact of coal related health harms warrants the inclusion of health in resource curse discourse.

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1. Introduction

The tension between the economic benefits versus unintended adverse consequences associated with extracting and exporting natural resources appears universal and has been conceptualised and debated in the discourse about the 'resource curse'. Much of the early literature about this was concerned with oil and centres on developing countries (see for example [Humphreys et al., 2007](#)) but has since been extended to natural resources more broadly.

Resource curse theory was formally articulated by [Auty \(1993\)](#) following decades of questions and counter-arguments challenging the conventional and intuitively credible wisdom encapsulated in the mantra 'mining for development'. While there is still some debate around the existence of the resource curse, the theory holds that resource-rich nations tend to perform poorly on overall economic growth and stability ([Sachs and Warner, 2001](#)). Such economies are characterised by rising domestic currency rates which harm local export industries such as primary/agricultural

production and manufacturing, and reduce economic diversity by creating dependency on mining. Scholars such as [Goodman and Worth](#), on whose definition we base the conceptual framework for this paper, have taken a more comprehensive perspective by including social, political and ecological dimensions to their analysis of the underpinning mechanisms and manifestations of the resource curse ([Goodman and Worth, 2008](#)). In either case the lure of abundant mining revenue can lead governments to forsake their loyalty and sense of accountability to the electorate in favour of revenue-raising mining elites ([Ross, 1999](#); [Davis and Tilton, 2005](#); [Collier, 2009](#)). Consequently, internal conflict arises between those who benefit from mining and those whose interests are neglected. The mechanisms underpinning such conflicts include widening income disparities within domestic labour forces, unfair distribution of the costs of mining externalities, and unfair burdens of environmental damage on communities versus the mining industry.

These tensions are palpable in Australia, a post-industrial economy rich in a variety of conventional and un-conventional fossil fuels and mineral resources. Indeed, since the 1980s, the large demand for fossil fuels from Asia, notably China, has placed Australia's coal economy at the forefront of the mining boom ([Carrington and Pereira, 2011](#); [Boutillier and Black, 2013](#)). This may

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be a mixed blessing as economic and political reliance on mining raises multiple concerns such as: the impact of the cyclical boom-bust nature of extractive industries on Australia's long term economic stability; the political economy of coal (ATSE, 2009; Richardson and Denniss, 2011); the negative impacts of coal on human health (Colagiuri et al., 2012) and suggestions that Australia may be suffering from a resource curse (Goodman and Worth, 2008; Corden, 2012).

Despite recent signs that export revenue from Australian coal has peaked, the expansion of many extraction facilities and export infrastructure is either underway or in planning (Shearman and Selvey, 2012a; Minifie et al., 2013; Edwards, 2014). Further, there is so far no sign that the AU\$1.7 billion annual taxpayer-funded support to the coal industry (Riedy, 2007) is likely to abate and, at the time of writing this paper, the Australian Government was said to be in the process of increasing mining subsidies. Such 'eggs-in-one-basket' pursuit of economic growth typifies the mechanism behind the so-called 'Dutch disease', a term coined to describe the Dutch government's unilateral focus on maximising economic growth by exploiting the discovery of large natural gas reserves in Holland in the late 1960s (Davis and Tilton, 2005). Failure of the government to manage the resultant growth in the value of its currency, and the negative impact of this on the ability of other industries to compete effectively on international markets, caused the country to go into recession despite its fossil fuel wealth (Auty and Warhurst, 1993).

Resource curse theory has traditionally focussed heavily on low and middle income countries (LMICs). Nonetheless, the Dutch disease illustrates an aspect of the causes and consequences of the resource curse in a fully industrialised economy and, like Goodman and Worth (2008) and Corden (2012), we argue that many of the characteristics of the resource curse are evident in the political economy of Australia's mining boom. Nonetheless, a recent report from Australia's Grattan Institute, of which the mining giant BHP Billiton is a founding member, claims that the negative effects that characterise the resource curse LMICs are not reflected in mining booms in high income countries (HICs) like Australia (Minifie et al., 2013). However, the Grattan report fails to take adequate account of the cost of externalities such as mining related health and environmental burdens, or tax-payer contributions to subsidies and other forms of government support and protection for mining industries.

We note that, given the large and rich volume of theory and evidence about social determinants of health (CSDH, 2008; Wilkinson and Pickett, 2010), and the weight of international evidence of coal mining related population health harms (Colagiuri et al., 2012) and social injustice (Morrice and Colagiuri, 2013), it is surprising that the resource curse literature consistently fails to consider health and/or its economic ramifications. Even in resource curse publications that discuss obvious social determinants of health such as employment disparities or environmental damage, virtually no attempt is made to analyse or acknowledge their implications for physical and mental health and well-being.

Given the known economic cost of ill-health and premature mortality (ATSE, 2009; Hendryx and Ahern, 2009) and associated lost productivity attributable to mining, we argue for the assessment and inclusion of health impacts in resource curse discourse. Additionally, while Goodman and Worth (2008) and Corden (2012) took a perspective on Australia as a nation, we propose that similar effects are manifest at the local community level and that the geo-political nature of Australia's Hunter Valley, with its high concentration of coal mines and power plants in closer proximity to human habitat than elsewhere in Australia (Hunter Communities Network, 2013), provides a natural laboratory for exploring these issues.

2. About the Hunter Valley

Situated in the state of New South Wales (NSW), about 150 km north of Sydney, the scenic Hunter Valley is one of Australia's oldest and largest coalfields. After initial discovery in the Hunter Valley in 1791, coal became, and has remained, a significant feature of the economy of this region and Australia overall. Tourism, agricultural and pastoral industries also have a long history in the Hunter Valley, making it a significant source of food for NSW, Australia's most populous state. For example, although the Upper Hunter covers only 2% of NSW's total grazing and cropping land, it contributes 67% of all exported stud horses, 15% of all milk, and 6% of all beef in NSW (DPI, 2013). The region is split into 11 local government areas, with around 54% of residents living in the metropolitan Newcastle or Lake Macquarie local government areas (RDA Hunter, 2013). The region has a total population of approximately 650,770 people, and excluding the city of Newcastle, the unemployment rate is 5.3% (ABS, 2013a). The population is ageing at a higher rate than the rest of Australia (RDA Hunter, 2013). The retail trade industry is the biggest employing sector of the region (excluding Newcastle) at 10.7%, followed by health care and social assistance, manufacturing, and then mining at 9.2% (ABS, 2013a). Despite its small size, the gross regional product for the Hunter was AU\$36.9 billion in 2012, and continues to be rising. While aggregate economic figures for the region provide a positive picture, there are distinct low socio-economic areas within the region (RDA Hunter, 2013) (Fig. 1).

The coal industry in this region traditionally co-existed relatively harmoniously with other local industries but rapid expansion of coal over the past three decades has disrupted this balance (Boutilier and Black, 2013; Duus, 2013). Small underground mines from colonial times have been replaced by open-cut and long-wall underground mines to increase coal production (Evans, 2010), causing total production to more than double between 1988 and 2007–2008 (ABS, 2010a). These changes have made social injustices reflective of the resource curse increasingly apparent. This shift, along with tacit government-industry 'collaboration' to expand coal-based economic growth, has been documented in the academic literature. There are currently 30–40 operating coal mines, a further 30 new mines or mine expansions planned, and six coal-fired power stations in the Hunter region (Colagiuri et al., 2012). Despite predictions that the mining boom of the past three decades is declining, there are plans for the large-scale expansion of the Hunter Valley's Newcastle coal terminal – already the largest black coal exporting port in the world (Shearman and Selvey, 2012b). Such expansion would add 70 million tonnes capacity per annum to the port, with a plan to eventually expand capacity again to 120 million tonnes per annum (CAHA, 2015).

This and other expansion of mining related activities in the region, such as the granting of expanded and new licences, have met with strong and highly vocal opposition from affected local communities and from the larger community of civil society organisations including professional societies and non-government think-tanks. Examples of opponents include Australian arms of international organisations such as Greenpeace and Doctors for the Environment (Australia), Australian organisations such as the Climate and Health Alliance, Beyond Zero Emissions and Lock the Gate, and is evident locally through residents groups in individual mining towns and communities.

3. Conceptual framework and methods

Despite an established discipline of environmental health concerned, among other things, with exposure to toxins, particulate air pollution and water contamination; and the considerable

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