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# From frontier governance to governance frontier: The political geography of Brazil's Amazon transition

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### ABSTRACT

The 'frontier' is central to a new wave of development scholarship, but the broad deployment of the concept has blurred several key dimensions of frontier development. We focus on the Brazilian Amazon to synthesize classical frontier theory and emerging perspectives with special attention to the role of governance in frontier development. Since 2004, primary deforestation in the Brazilian Amazon has declined over 70 percent while agricultural production in the region has increased. Contrary to narratives that view this transition as the result of 'frontier governance' - i.e., the imposition of order on a preexisting frontier - we propose the concept of a 'governance frontier,' which recognizes the role of politics in constructing and transforming frontier spaces. This concept politicizes economic accounts of frontier development and spatializes abstract notions of governance. We employ a 'follow the policy' methodology to trace the evolution of a governance frontier in the eastern Brazilian Amazon, drawing on original fieldwork across four Amazonian municipalities and inside an environmental non-governmental organization. We show that a key feature of the Amazonian governance frontier has been a distinct geographical configuration of 'model municipalities' that function as nodes of policy experimentation, legitimation, and transfer. Our findings support an integration of frontier theory and governance theory in a placebased, political geography approach to regional political-economic transformation, which demands greater attention to the political dimensions of frontiers and to the spatial dimensions of governance. © 2018 Elsevier Ltd. All rights reserved.

The 'frontier' is a persistent spatial imaginary in academic and popular understandings of development. Although the frontier has been prominent historically in scholarship on New World settlercolonial societies (Billington, 1971; Hennessey, 1978; Turner, 1921; Webb, 1952), a new wave of frontier thinking is underway. A spate of recent publications focuses on 'commodity frontiers' (Moore, 2000, 2015) or 'resource frontiers' (World Development, 2018); a 2016 Social Science Research Council workshop was devoted to "Frontier Assemblages" in Asia; and a series of five sessions at the 2018 Annual Meeting of the American Association of Geographers examined "Frontiers in the Contemporary Moment."

These engagements with the frontier concept are producing valuable new theoretical and empirical insights. As frontier theory is deployed more broadly, however, several weaknesses are becoming apparent, especially with regard to the literature on 'resource frontiers,' which views frontiers as constituted through the extraction and commodification of specific resources such as

\* Corresponding author. E-mail address: gthaler@uga.edu (G.M. Thaler). gold, carbon storage, or 'scenery' (Barney, 2009; Rasmussen & Lund, 2018, 391; Tsing, 2003; World Development, 2018). In particular, the resource frontier approach struggles to explain several key dimensions of frontier development, namely, the articulations among different resource frontiers within a single landscape, the ways that distant frontiers may be linked with each other, and agricultural intensification as a frontier phenomenon. This article returns to the New World settler-colonial frontier of the Brazilian Amazon to develop a synthesis of classical frontier theory and emerging perspectives with special attention to the role of governance in frontier development.

In Brazil, the Amazon region has been a lodestar of frontiermaking projects, and the inspiration for diverse strands of frontier theory, in both English and Portuguese (e.g., Becker, 1982; Foweraker, 1981; Martins, 1972; Schmink & Wood, 1992; Velho, 1972). The Brazilian Amazon since the 1970s has undergone massive land use change, resulting in deforestation of an area larger than France (INPE, 1989, 2018; Skole & Tucker, 1993). Forest conversion was driven initially by small farmer migration, extractive logging and mining, and extensive cattle ranching, followed by industrial





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ranching and soy cultivation. Since 2004, however, regional deforestation rates have declined over 70 percent,<sup>1</sup> while soy production in the Legal Amazon has nearly doubled and the cattle herd has grown by 20 percent (IBGE, 2018a, 2018b).<sup>2</sup> This transition towards a lowdeforestation, high-productivity agro-industrial economy has been strongly influenced by new policy measures that Nepstad and colleagues term 'frontier governance' (Nepstad et al., 2002, 2014).

Taking as a starting point the crucial role of governance in transforming the Amazon frontier, this article explores the political geography of Brazil's Amazonian transition, i.e., how governance develops through space and time. Our goal is not to explain the full range of policies and socio-economic factors that led to reductions in Amazonian deforestation. These factors have been analyzed in a number of important articles (Assunção, Gandour, & Rocha, 2015; Hecht, 2011; Nepstad et al., 2014). Deforestation reduction is part of a broader "pervasive transition" of the Amazonian land use system (Lapola et al., 2013), however, which includes transformations in productive practices and policy frameworks in the agricultural zone outside of conservation areas and indigenous territories.<sup>3</sup> We focus on this zone of agricultural colonization, where politicaleconomic developments have depended not just on reduced deforestation and agricultural intensification, but also on political changes that help direct and stabilize the emerging 'green' agro-industrial order. Political change, like forest conservation and agricultural intensification, is a process that develops through time and space, and it does not occur everywhere equally and all at once. Governance on the ground takes shape through the interplay of local policy processes with governance initiatives at other levels and scales, which vary from place to place in their implementation.

We approach this political geography of Amazonian governance through an engagement with the literature on Amazonian frontier development. Based on our reading of this literature, we conceptualize frontier change as the expansion and contraction of particular political-economic systems of rural production. This approach revises the 'resource frontier' perspective by incorporating resource frontiers within a systemic political economy. At the same time, we share with the resource frontiers literature an attention to multiple, interrelated political-economic and socio-ecological dimensions of frontier formation. Consequently, we critique the narrative of Amazonian 'frontier governance' for its narrow definition of the frontier and its abstract understanding of governance.

Land cover change and governance are both spatiallydifferentiated processes and do not necessarily evolve in congruence. We employ a "follow the policy" approach (Peck & Theodore, 2012) to reveal how abstract constructs of 'governance' are constituted through specific political processes situated in space and time. Based on original fieldwork following policy within an environmental non-governmental organization (NGO) and across four municipalities in the eastern Brazilian Amazon, we demonstrate the importance of 'model municipalities' as nodes for the development of Amazonian environmental governance, and we argue for a reconceptualization of environmental governance and frontier theories through the frame of a 'governance frontier.' The 'governance frontier' concept works to politicize economic accounts of frontier development, to spatialize abstract notions of governance, and to problematize narratives of 'frontier governance.' Additionally, we advocate moving beyond conventional distinctions between 'hard' and 'soft' governance (based on 'state' versus 'non-state' actors) to recognize the essential hybridity of policy processes, and we conclude with a call for research to examine the entanglements of the governance frontier with other social, economic, and ecological frontier dimensions.

#### 1. Background

Large-scale deforestation of the Brazilian Amazon began in the 1970s with the expansion of small farmer migration, extractive logging and mining, and extensive cattle ranching (Hecht & Cockburn, 2010; Schmink & Wood, 1992). Since the 1980s, industrial ranching and soy cultivation have expanded dramatically (Rudel, DeFries, Asner, & Laurance, 2009), accelerating annual deforestation rates to the point where in 2004 nearly 28,000 km<sup>2</sup> of forest was cleared. After 2004, however, deforestation rates declined 84 percent to reach their lowest point in 2012, while regional agricultural production continued to increase (cf. Macedo et al., 2012). Deforestation rates have crept upward since then, but they remain at historically low levels as the agricultural economy continues to intensify (Gibbs et al., 2015; Pacheco & Poccard-Chapuis, 2012; zu Ermgassen et al., 2018).

Deforestation reductions have been driven significantly by new environmental governance measures (Assunção, Gandour, & Rocha, 2012; Nepstad et al., 2014), including the creation of new conservation areas and indigenous territories (Schwartzman, Alencar, Zarin, & Souza, 2010; Soares-Filho et al., 2010), soy and cattle industry moratoria on commercialization of commodities from newly-deforested areas (Gibbs et al., 2015, 2016), and enhanced enforcement of the Federal Forest Code.<sup>4</sup> New governance measures have also supported agricultural intensification, for example through the creation of new credit incentives such as the federal government's Low-Carbon Agriculture Program (ABC), and through the promotion of integrated pasture-cropping systems by the federal agricultural research corporation (Embrapa). Governance measures are by no means the only factors behind deforestation reductions and agricultural intensification. They interact with other forces such as social movement activism, macroeconomic factors, technological developments, and environmental changes. At the same time, an understanding of governance processes is necessary for a full understanding of the dynamics of regional transformation. Crucially, the multiple political-economic dimensions behind the Amazonian transition do not materialize everywhere equally, nor do they always cooccur. In particular, the governance apparatus that supports 'green' agro-industry in the Brazilian Amazon has emerged through specific policy processes with particular temporal and spatial manifestations. Municípios, or municipalities, have been a key level for the development of new policy models and the implementation of state and federal policies. We adopt a place-based approach in this article that situates municipalities in relation to each other and to regional and national-level governance processes. Before elaborating on our methodology, we frame our approach to the political geography of Amazonian development through an engagement with the literatures on frontiers and governance.

#### 2. Frontier theory

Nepstad et al. (2002) describe the Amazonian transition as a process of 'frontier governance.' In geography, history, and political

<sup>&</sup>lt;sup>1</sup> Deforestation figures in this article are from INPE's PRODES program (INPE, 2018), which uses Landsat imagery to report annual clear-cutting of areas over 6.25 ha in Amazonian primary forest from 1988 to present.

<sup>&</sup>lt;sup>2</sup> The Legal Amazon is an area designated by the Brazilian Government for regional policy and includes the states of Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins, and western Maranhão.

<sup>&</sup>lt;sup>3</sup> Agriculture refers to both cultivating crops and raising livestock.

<sup>&</sup>lt;sup>4</sup> The Brazilian Forest Code prohibits clearing along bodies of water and on steep slopes and hilltops, which are called 'permanent preservation areas,' and it generally requires landowners in the Amazon to maintain 80 percent of their property area under natural vegetation as a 'legal reserve,' deforesting no more than 20 percent of their properties for other uses. The Forest Code was passed in 1965 and later modified by presidential decrees, but it went largely unenforced until 2004. A revised Forest Code was passed in 2012.

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