

# How has the Brazilian Amazon been constructed as a problem: presidential speeches and transnational politics since 1985

Livio Silva-Muller

Henrique Sposito\*

23 September 2022

## Abstract

Presidential speeches can influence the ways people think and act towards the environment, but they are understudied. We propose a framework to investigate how the Brazilian Amazon has been constructed as a problem across time and space. Using supervised machine learning, we classify statements about the Amazon in 6240 transnational presidential speeches since 1985. We find that national and international events drive the frequency at which the topic of the Amazon is mentioned in presidential speeches. While constructing the Amazon as a problem of economic integration are the most common until the mid-2000s, environmental conservation and social development constructions temporarily surpass economic integration from 2010 to 2015. In turn, constructing the Amazon as an issue of sovereignty increases since 2010. Lastly, presidents usually construct the Amazon as an issue of environmental conservation internationally. When speaking within the Amazonian region, presidents tend to construct the Amazon as an issue of social development and economic integration.

**Keywords:** discourse analysis, transnational governance, environmental policy, Brazilian Amazon, supervised learning, deforestation

**Word Count:** 8299 (including abstract, text, references, and footnotes)

---

\*Both co-authors contributed equally to the article. Names are ordered alphabetically. Livio is a PhD Candidate in Anthropology and Sociology at the Geneva Graduate Institute and affiliated to the Albert Hirschman Centre on Democracy. Henrique is a PhD Candidate in International Relations and Political Sciences at the Geneva Graduate Institute and affiliated to the Centre for International Environmental Studies.

## **1. Intro**

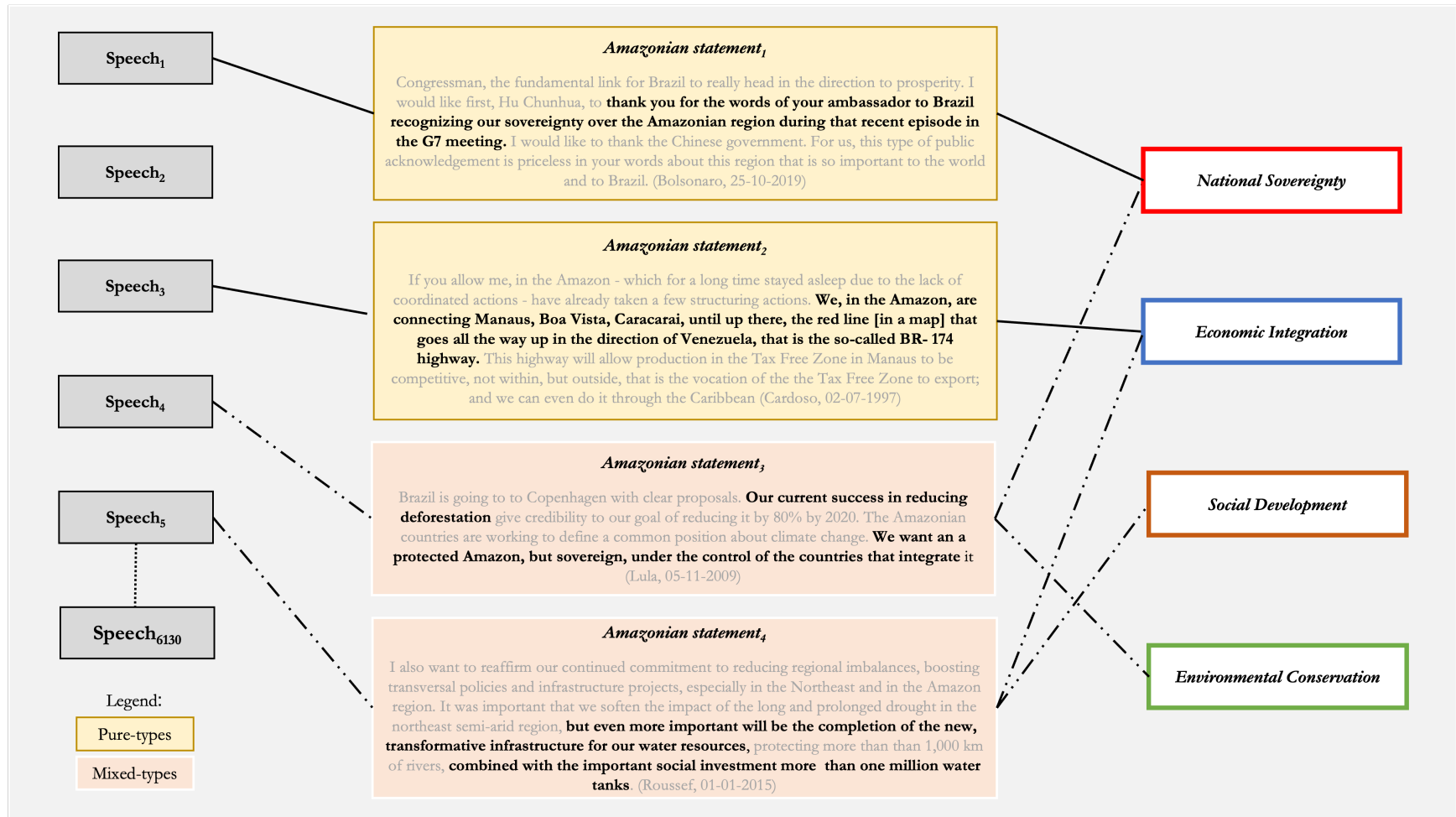
## **2. Theory**

## **3. Methods**

### **3.1 Problem-construction**

### **3.2 Data and Operationalization**

Figure 1: Operationalization of problem-constructions



### 3.3 Analysis and Limitations

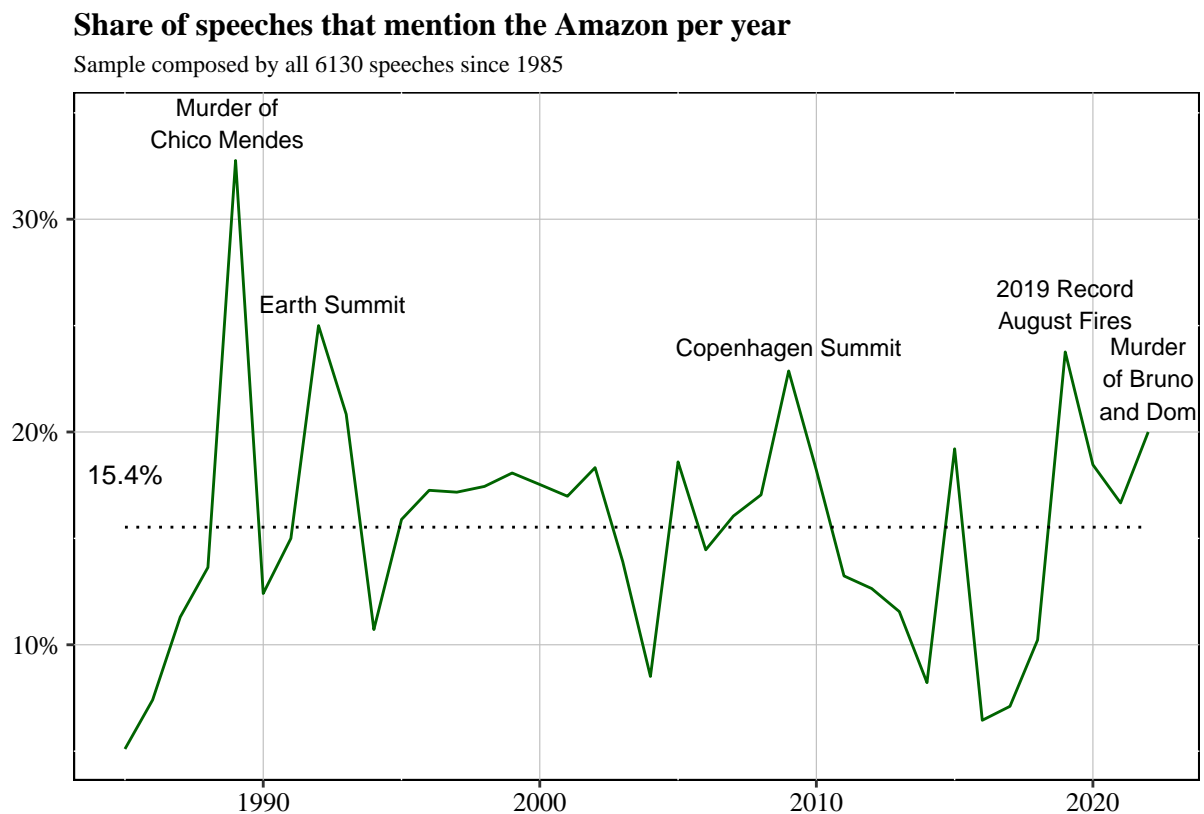
Models Description	Dependent variables	Independent Variables	Controls
Fixed-effects logistic regressions indexed by president (controlling for time and ideology).	Pure environmental conservation; pure economic integration; pure social development; and pure national sovereignty.	Amazonian states within Brazil (reference category); non-Amazonian Brazilian states; Brasilia; Amazonian countries; and international.	Yearly deforestation rates lagged by one year; average annual inflation; election years; and peak years for Amazon appearing year in presidential speeches (footnote).

Table 1: Model description

## 4 Analysis

### 4.1. In time

Figure 2: Amazonian speeches in time



### 4.2. Model

	<i>Dependent variable:</i>			
	Environmental Conservation	Economic Integration	Social Development	National Sovereignty
	(1)	(2)	(3)	(4)
Non Amazonian States	0.042* (0.022)	−0.001 (0.027)	0.002 (0.020)	0.035** (0.015)
Brasilia	0.115*** (0.021)	−0.069*** (0.026)	−0.025 (0.019)	0.028** (0.014)
Amazonian Countries	0.016 (0.032)	0.092** (0.039)	−0.097*** (0.029)	−0.0004 (0.021)
International	0.217*** (0.031)	−0.050 (0.038)	−0.059** (0.028)	−0.005 (0.021)
Deforestation	−0.004** (0.002)	0.012*** (0.002)	−0.001 (0.002)	−0.0001 (0.001)
Inflation	0.0001** (0.00003)	−0.0001*** (0.00004)	0.00002 (0.00003)	−0.00001 (0.00002)
Election Year	0.046** (0.022)	0.008 (0.026)	0.009 (0.019)	−0.009 (0.014)
High-profile Events	−0.005 (0.028)	−0.019 (0.034)	0.019 (0.025)	0.082*** (0.019)
Observations	1,887	1,887	1,887	1,887
R <sup>2</sup>	0.043	0.035	0.012	0.018
Adjusted R <sup>2</sup>	0.036	0.027	0.004	0.010
F Statistic (df = 8; 1871)	10.616***	8.385***	2.772***	4.258***

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

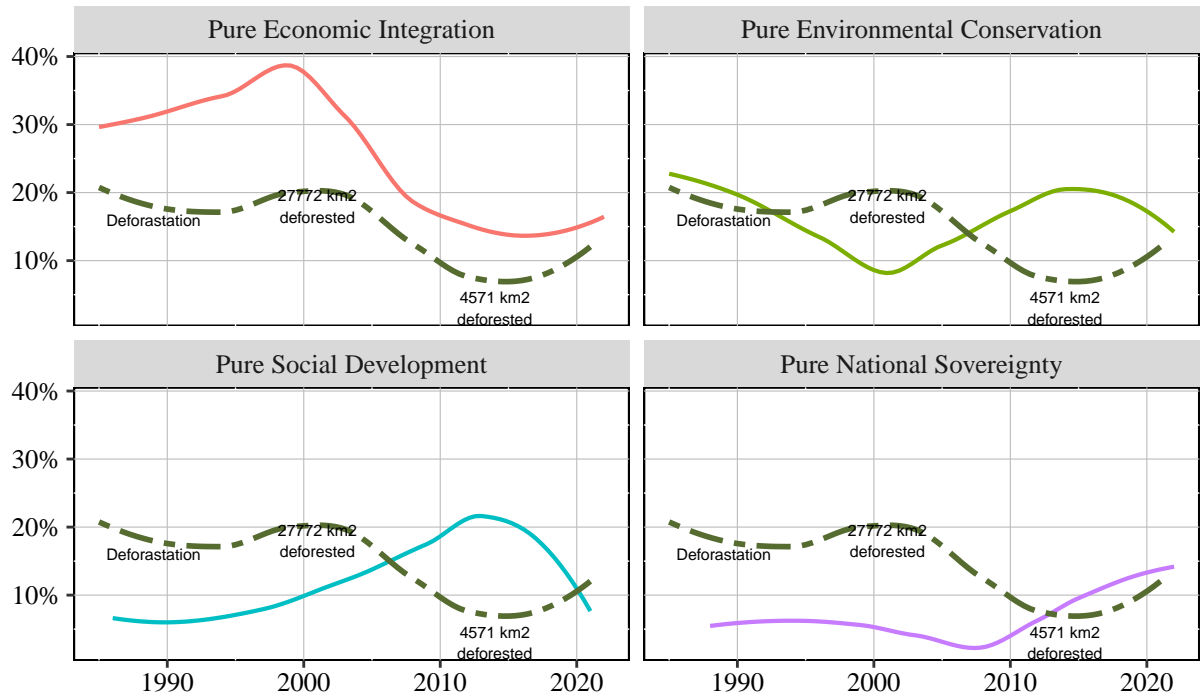
Table 2: Fixed-effects logistic regressions by president with controls

### 4.3. Pure type

Figure 3: Pure-types in time

#### Share of each pure-type problem–construction by year

Sample composed by 1924 Amazonian statements in presidential speeches since 1985



Curves in the plot were smoothed using loess method.

## 5. Discussion

### Acknowledgements

The authors are extremely grateful to Matias López, Graziella Moraes Silva, and James Hollway for their support. The authors would also like to thank the Mario, Federico, Rodrigo, and Anna for valuable comments on earlier drafts of this paper.

### Disclosure Statement

The authors report there are no competing interests to declare.

## References

Hecht, Susanna, and Alexander Cockburn. 1990. *The Fate of the Forest: Developers, Destroyers, and Defenders of the Amazon, Updated Edition*. Chicago, IL: University of Chicago Press. <https://press.uchicago.edu/ucp/books/book/chicago/F/bo10387801.html>.

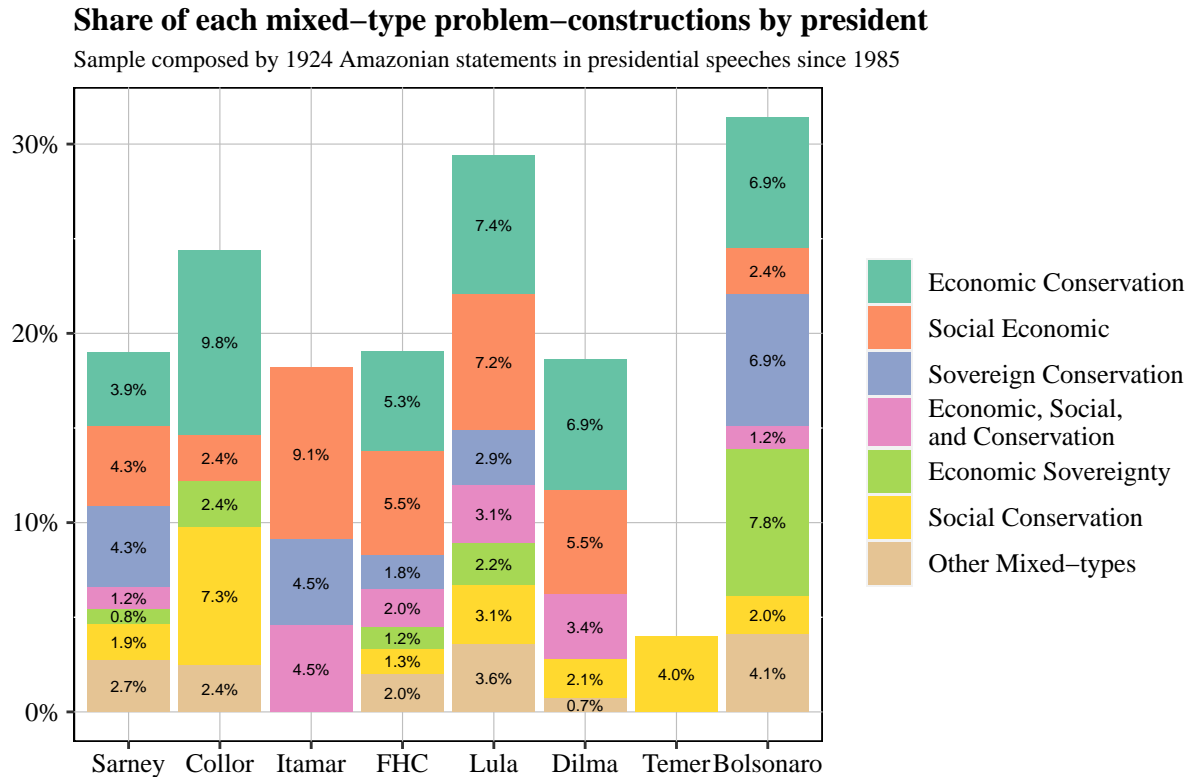
## Appendix

	problem- construction	Description	Example
∞	<b>National Sovereignty</b>	This code constructs the Amazon region and/or forest as an issue of national sovereignty. We understand claims of sovereignty as a particular problem-construction that touches on imaginaries of external threats to territory. Relatedly, we also understand sovereignty as raising concerns about wrong perspectives and criticism from foreign and non-state actors about government action related to the Brazilian Amazon. In all, it advances the view that the Amazon is Brazilian, foreign, and non-state presence in the region needs to be monitored closely.	Congressman, the fundamental link for Brazil to really head in the direction to prosperity. I would like first, Hu Chunhua, to thank you for the words of your ambassador to Brazil recognizing our sovereignty over the Amazonian region during that recent episode in the G7 meeting. I would like to thank the Chinese government. For us, this type of public acknowledgement is priceless in your words about this region that is so important to the world and to Brazil. (Bolsonaro 25/10/2019)
	<b>Economic Integration</b>	This code constructs the Amazon region and/or forest as an issue of economic integration. It advances the view that the Amazon needs to be developed and connected to the national economy. This includes expanding the agricultural frontier through incentives, creating a diverse set of infrastructure (roads, dams, internet, radio, energy), fostering differing industries (tourism, mining, cattle, agriculture and so on) through tax-free zones, as well as facilitating the exploitation of natural resources for developmental purposes.	If you allow me, in the Amazon - which for a long time stayed asleep due to the lack of coordinated actions - have already taken a few structuring actions. We, in the Amazon, are connecting Manuas, Boa Vista, Caracarai, until up there, the red line [in a map] that goes all the way up in the direction of Venezuela, that is the so-called BR-174 highway. This highway will allow production in the Tax Free Zone in Manaus to be competitive, not within, but outside, that is the vocation of the the Tax Free Zone to export; and we can even do it through the Caribbean (Cardoso 02/07/1997)
	<b>Social Development</b>	This code constructs the Amazon region and/or forest as an issue of social development. It advances the view that Amazon is full of citizens who should have their rights guaranteed. This refers to the construction of schools and universities (right to education), of hospitals (right to health), and of housing (right to house). This also includes guarantees of a dignified life with decent employment, access to water and sanitation, as well as access to electricity, internet, radio, and light. Finally, this includes referrals to culture and the right to vote.	The state does not work for profits, the state needs to guarantee dignity, we find that a citizen who lives in the riverside of the Amazon river, 600 kilometers from Manaus, has the right to have the electricity in their house, to owe a fridge, to owe a television where to watch the soap operas. We have invested over 14 billion reais in this program, in three and a half years. Do you know how many electrical lines we have already built? One million kilometers of lines. (Lula 20/11/2009)
	<b>Environmental Conservation</b>	This code constructs the Amazon region and/or forest as an issue of conservation. This problem-construction focuses on the value of a standing forest and of the preserved ecosystem in the region. The conservationist narrative advances the view that Amazon should be preserved, deforestation should be halted, and the practices of indigenous and traditional populations should be maintained and fostered. It advances the view that the emission of greenhouse gasses should be halted, that renewable energy should be supported, and that protected areas should be created.	I have put in place emergency measures, I have suspended the exports of wood logs, I have suspended the fiscal incentives and credits to projects that could damage the environment in the amazon and I have made a license mandatory to gold mining that prohibits utilizing mercury in the process. This began the restructuring of the governmental system of control and preservation of the environment, I have created the Brazilian Institute for the Environment and Natural Resources [IBAMA], which will be headed by Dr. Mesquita (Sarney 20/07/1989)

Table 3: Amazonian Problem-Construction Codebook



Figure 4: Mixed-types by president



In a speech, presidents might mix multiple problem-constructions within an Amazon statement. Mixed-type problem-constructions in discourse offer more intricate understandings of the Amazon as a problem. Constructing the Amazon as multiple issues averages at 18% of all constructions over time. The most frequent mixed-type problem construction of the Amazon is economic conservation. This mixed-type construction, composed of Amazonian statements that construct the Amazon as a problem of both economic integration and environmental conservation, generally increased over time. This increase suggests that later presidents, along with being more diverse in how they construct the Amazon as an issue, increasingly find ways to reconcile the dictum between the economy and the environment that had prevailed in the previous years. The second most common mixed-type mixes social development and economic integration and appears, on average, in 5.4% of all statements. This is not surprising, as developing countries like Brazil repeatedly claim a “right to develop”, when it comes to negotiating strong climate commitments and policies with a focus on both social development and economic integration. Nonetheless, there is a general increase of mixed-types over time, which is expected given the rise of global agendas understanding interconnections of social, environmental, and economic domains such as the Millennium Development Goals and the Sustainable Development Goals. Furthermore, both Lula and Bolsonaro construct the Amazon as a multifaceted issue more frequently than other presidents. Lula usually mixed economic integration with environmental conservation and social development when

constructing the Amazon as an issue, while Bolsonaro constructs the Amazon as an issue of national sovereignty and economic integration much more than any other president, mimicking the military dictatorship discourses and policies toward the region (Hecht and Cockburn 1990).