Toponymy on Rio de Janeiro State, Brazil: From Historical to Actual Maps – Research`s State of Art

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Summary

• Introduction

• Considerations on Rio de Janeiro Territory

• The General language

• Toponymic Extraction Methodology

• Rio de Janeiro Geographical Names Database

• Conclusions
1 - Introduction
This work intends to present the state of art of the research project on the historical and current toponymy of Rio de Janeiro State, Brazil, developed in the Laboratory of Cartography, Geography Department, Federal University of Rio de Janeiro.

Main Objective
Study and research of the Historical and current Toponymy of Rio de Janeiro State, Brazil.

Secondary Objectives
Study of the territorial evolution from the origins to its consolidation and influence on toponymy;

Study of the toponymy and its evolution on a historical, geographical, cultural, linguistics and anthropological approach;

Development of a Toponymy Database;

Create questions and conclusions about the research;
2 - Considerations on Rio de Janeiro Territory

Rio de Janeiro is one of the 23 states of the Federative Republic of Brazil.

The History of Rio de Janeiro Toponymy began earlier, in 1501, during the first exploratory expedition, led by Gaspar de Lemos, with Amerigo Vespucoi's participation.
The first nomination occurred on January 1st 1502, when the expedition arrived at the current Guanabara Bay – *Rio de Janeiro* – the first toponym.

Indigenous toponyms will be present only after the effective beginning of the colonization, started from 1530.

To understand how was developed the toponymy evolution in Brazil and more specifically in Rio de Janeiro State and the influence of the indigenous languages in the Brazilian place names refer to a survey immediately after the discovery by the Portugueses.

The Brazil of 1500 presented itself as an immense territory, where the linguistic structure was of full *multilingualism*, where there were approximately 1175 spoken languages, none of them was associated to any kind of writing.

There was a relative linguistic unity along the coast, where were established the *Tupi* group, belonging to the Tupi-Guarani family.
Rio de Janeiro

It’s not easy to define who were the indigenous in the State. There was only spoken languages, therefore no written documents. Several grammars were created along the time.
The indigenous languages in Rio de Janeiro State were classified by Curt Nimuendajú in 20 different idioms formed by 4 families and 1 group unclassified.

I – TUPI FAMILY or tupi-guarani
II – PURI FAMILY
III. BOTOCUDO FAMILÍLY
IV. MAXAKALÍ or MASHAKALÍ FAMILY
The existing native linguistic homogeneity allowed the Jesuit priests catechists, to create a grammar and consequently a general language, which would provide support not only for them, but also for learning and communication by the settlers.

By the early eighteenth century, the proportion between the two spoken languages in the colony was at least three to one, from the Tupi to the Portuguese.

The toponymy during 16th and 17th centuries was strongly influenced by the religious aspect and by the native language.
In the mid-eighteenth century two important factors have a great influence on Brazilian toponymic evolution:

*the prohibition of Brasília language* in 1757 and
*the expulsion of the Jesuits* in 1759.

Expansion of the Portuguese language throughout the Brazilian territory, establishing in the linguistic and toponymic level, the Portuguese hegemony in the colony.

Hunting, fishing, subsistence farming, use of flora as medicinal element, and the nomination focused to the description of landscape elements, through a geomorphological, hydrographic and descriptive approach, will be aggregated across all inherited linguistic contributions of these groups.

However, the original language influenced strongly on Brazilian Toponymy, specially over city names, hydrography, massives, mountains, beaches and others.
4 – Toponymic Extraction Methodology

Historical Cartography (Centuries: 16\textsuperscript{th}, 17\textsuperscript{th}, 18\textsuperscript{th}, 19\textsuperscript{th}, early 20\textsuperscript{th}), Paper maps

- Use of scanned image at least 600 dpi or more, tif format;

Creating preliminary table with following fields:

<table>
<thead>
<tr>
<th>Id</th>
<th>Name</th>
<th>Feature</th>
<th>Class</th>
<th>POINT_X</th>
<th>POINT_Y</th>
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<tbody>
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<td></td>
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<td>Rio Picinquaba</td>
<td>Rio</td>
<td></td>
<td>741,01187828400</td>
<td>-3527,90986260000</td>
</tr>
</tbody>
</table>

- Toponymy/symbol identification and point vectorization;
- Copy to table manually: Name, Feature and Class;
- Software puts automatically the X and Y map coordinates;
- Adding table fields Language and Toponymy Motivation;
- Georeferencing – φ and λ

- Intensive use of scholarships for the development of the manual tasks!
Examples Historical Maps:

Carta Chorographica da Capitania do Rio de Janeiro - Roscio – 1777
Extracted Toponymy: 669
Map of Rio de Janeiro Province – 1830
Extracted Toponymy: 570
Maps from 20th Century (late)

- Same previous methodology used for some maps (until 1990);
- OCR use in some maps;
- Use of the Thesaurus for some maps (milionth scale maps);

- Vectorized Maps:
  - Extracting Table for each feature;
  - Toponymy/symbol identification and point vectorization;

- All fields, except Language and Toponymyc Motivation are automatically on table.
# Extracted Toponymy – Small Scales

<table>
<thead>
<tr>
<th>Nr</th>
<th>Maps</th>
<th>Aprox Scale</th>
<th>Extracted Toponymy</th>
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</thead>
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<tr>
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<td>Luis Teixeira - 1534</td>
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<tr>
<td>2</td>
<td>Capaci - 1732</td>
<td>1:400.000</td>
<td>157</td>
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<tr>
<td>3</td>
<td>Roscio - 1777</td>
<td>1:400.000</td>
<td>669</td>
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<tr>
<td>4</td>
<td>RJ - 1830</td>
<td>1:400.000</td>
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<tr>
<td>5</td>
<td>RJ - 1858</td>
<td>1:200.000</td>
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<td>RJ - 1922</td>
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<td>RJ - 2008</td>
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<td>13</td>
<td>RJ - 2011</td>
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</table>
Larger Scales

**Map Scales**

- Federal Systematic Surveying in 1: 50,000 scale:
  52 sheets covering the whole state and boarders;
  Digitized maps in .dgn files.

- Municipality Maps:
  Old Analog maps in scales varying from 1:2,000 to 1:20,000;
  New digital maps .dwg files and similar scales.

Toponymy on maps is selective

Regarding Topographic and cadaster maps, how large is the map scale, greater will be the number of place names on it.

**Toponym extraction 1/1 scale**
Santa Maria Madalena Municipality
5 - Rio de Janeiro Geographical Names Database

- To contain all toponymy on maps;

- To identify each toponym and its geographical, linguistic, motivation, cultural, historical, structure and aspects;

- Separation by geographical feature:
  - Hydrographical Elements: beaches, rivers, lakes, capes, bays, etc;
  - Orography: Mountains, hills, picks, etc;
  - Urban nuclei: Cities, towns, villages, small settlements, churches, etc;
  - Land Use: farms, mills, lodges, commerce, etc;
  - Paths: roads, stops, trails, stations;
  - INDE infrastructure (Brazilian Spatial Data Infrastructure)

- Georeferencing evaluation: coordinates, map projection, geodetic system and positioning;

- Spatial-time comparison, orthographical changes, spatial changes, name changing over time and same space;
Rio de Janeiro Geographical Database (BNGERJ) – Structure Preview
6 – Conclusions

The research is in development.

Until the end of next year, it will be included the toponymy of the 1:50,000 scale mapping of Rio de Janeiro;

The space-time database will allow entries through toponymy, date and spatial reference on the State;

The research team included in this year two linguistic specialists in indigenous language, and one anthropologist.

The database will be developed jointly IBGE, the Brazilian Institute of Geography and Statistics.
- Extracted toponymym:

  Only geographical features: 53830;
  With street names: 124853.

- Not considering yet Metropolitan Region (Rio de Janeiro and Satellite cities). 12 main cities, 38 villages.

- Expected toponymy to be extracted: around 250,000.
Thank You for your attention!

Obrigado!