

Narrative Geospatial Knowledge about Taiwanese Aboriginal Settlements — A Case Study

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Abstract

In old articles and books about Taiwan aborigines, verbal phrases are often used to describe the current and historical locations of aboriginal settlements. These narrative descriptions form a kind of geospatial knowledge that defies ready quantification and processing. How to represent such narratives so as to allow for understanding the locations of the aboriginal settlements as described, and for reasoning about their geospatial relationships? We address these problems by defining and using a vocabulary for qualitative geospatial expressions. This formal vocabulary is developed based on a careful study of selected texts in ethnography about East-Sedeq Atayal. The vocabulary is then used to represent and reason about narrative geospatial relationships among the aboriginal settlements as described in the texts. As such, the vocabulary can be viewed as a small ontology on geospatial narratives about populated places. The vocabulary is formalized in OWL (Ontology Web Language), and the rules for qualitative geospatial reasoning are expressed in the language SWRL (Semantic Web Rule Language).

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