

Reviving an Indigenous Rainforest Sign Language: Digital Oroo' Adventure Game

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ABSTRACT

The extinction of indigenous languages, which convey cultural worldviews, remains a continued threat to cultural heritage preservation. The nomadic Penans in the rainforests of Malaysian Borneo, have developed Oroo', their own forest sign language, to communicate with each other. Yet with recent developments the younger generations are drawn more to technology than engaging with their surrounding forest, only vaguely remembers few signs. In this paper, we present one of our initiatives to reintroduce Oroo' to the younger Penan generation by digital means. Under the auspices of a long term collaboration with the Long Lamai community we have developed and evaluated a first digital Oroo' adventure game for the children. Results show a general interest in digital games with indigenous Penan contents albeit with a slight learning curve only. The project efforts rely on local community's active participation and using indigenous wisdom as an essential component to digitalize and preserve the language further.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation]: User Interfaces - Interaction styles

General Terms

Design, Human Factors

Keywords

Indigenous sign language, Oroo', digital indigenous game, borneo, penan

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1. INTRODUCTION

A great variety of indigenous languages have evolved and perished over centuries of human kind. Only some of these languages have been documented in archives and even fewer in digital forms. Languages represent a significant element of indigenous knowledge systems, thus should be digitalized as part of cultural heritage preservation efforts. Besides spoken and written languages, many indigenous sign languages are expressed visually or physically. Well-known examples are aboriginal rock body art and Native Indian smoke signals. Much less documented and well-known are the sign and secret languages of rainforest inhabitants, which are made out of combinations of twigs, leaves and other jungle products. One example of sign languages Murut announcement sticks in North Borneo have been described by a number of anthropologists, such as by Polunin [1].

Penans are one of the indigenous communities living in Sarawak, Brunei and Kalimantan [2]. The Sarawak Penan population in 2010 was estimated to be 16,281 people of which about 77% have settled permanently. The remaining 20% are semi-nomadic while 3% are still nomadic [3]. The Penans have developed their own jungle sign language, called Oroo', which was introduced to us in Long Lamai. Our literature background research has revealed that information about Oroo' is extremely limited. Among a few sparse references, one paragraph of a BBC article [4] which refers to their forest sign language: "The Penan like their secrets and have a complex sign language for use in the forest. A bent twig stuck in the trail may simply say 'we went this way', but complex arrangements of cut twigs, sticks and folded leaves can tell the Penan anything from the state of hunting locally to whether the person leaving the sign is in a good mood."

To the best of our knowledge, neither a formal documentation process nor a digitalization effort has been initiated for preservation of Oroo'. This paper introduces our current Oroo' digitalization project as well as one of the attempts to reintroduce the language to the Penan youth. The paper is organized as follows. Section 2 presents the project background. Section 3 describes the motivation of the research, the documentation of Oroo' signs and the results of preliminary surveys. Section 4 describes Oroo' Adventure Game and the primary results of the game usability evaluation. Section 5 concludes the paper.