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USER STUDY OF A MAP-BASED SLIDESHOW EDITOR

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BACKGROUND AND OBJECTIVES

Many kinds of "my map" applications allow us to create maps that display places we have visited, along with photographs, videos, texts, etc. We assume one of the next requirements for this kind of map application is to facilitate map-based storytelling. In relation to this requirement, the concept of geographical storytelling has been suggested (Cartwright 2004), in which users may construct their own story, or be "talked" through an area.

The objective of this paper is to identify and discuss the characteristics of map-based stories and the effectiveness of maps in editing them. We define a map-based story as follows:

- The entire story is composed of a sequence of locations.
- Each part of the story is conveyed so that it accompanies each location.
- Story narration is recorded in the form of text, audio, movies, etc.
- The order of the sequence that composes an entire story is pre-designed by the author.
- For those watching it, the story basically progresses from start to finish automatically, or by just clicking buttons such as "next" at each break point.

As an example of map-based stories, Google Earth has a function to create a tour, which is a guided experience in which viewers fly from one location to another in accordance with pre-recorded navigation. Among stories created as Google Earth tours, "Map the Fallen" (Askay 2010), which tells the story of soldiers who died in Iraq and Afghanistan, has gained a reputation for its impressive expression. As another unique example, "The 21 Steps" (Cumming 2008) is a digital suspense novel written by a professional novelist. The entire story is told on Google Maps and unfolds across a map of the world as the reader follows the both the hero and his journey.

APPROACH

We have also developed software for mapping photo collections and creating slideshows in order to present travelogues, sightseeing guides, etc., which we call a map-based slideshow or a spatial slideshow (Fujita 2008) (http://s-it.org/photofield) (Fig. 1, 2, 3). We assume spatial slideshows are simple forms of map-based stories. We analyze 80 user-created map-based slideshows, focusing on the spatio-temporal relationships among the photographs that compose the slideshow. We also conducted a user study on 10 university students, focusing on how and in what order they edit map-based slideshows.

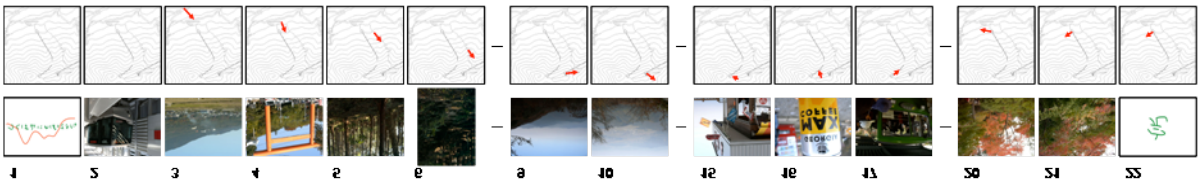

Figure 1. Spatial slideshow

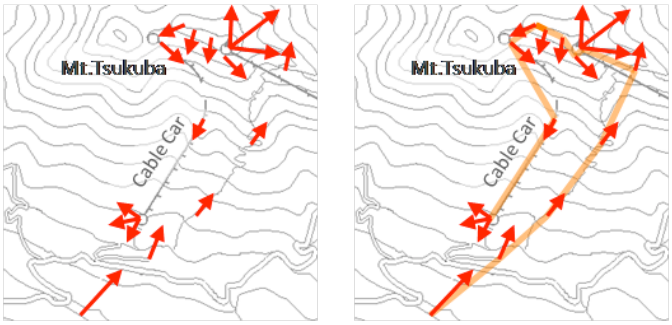

Figure 2. Spatial slideshow

Figure 3. Spatial slideshow editor

RESULTS AND DISCUSSION

Examples of the results are as follows:

- There are characteristic alignments of photographs (e.g. spatial patterns) on the maps (Fig. 4).
- There are characteristic temporal orders of photographs (e.g. temporal patterns) in slideshow sequences (Fig. 5).
- Most users added most photographs to a map first, before adding them to the slideshows (Fig. 6).
- Significant numbers of photographs in each slideshow were not arranged in the order of the shooting date/time (Fig. 7).
- The spatial order often has priority over the temporal order in creating stories.
- When people create stories, they do not always arrange events in the order they were actually experienced. People often prefer to arrange the order according to their subjective wishes.

Based on the results, the following things are discussed:

- The effectiveness of maps in arranging stories
- Why maps are important in investigating the story structure

	walkthrough	panorama	object
alignment of photo vectors on map			
photo sequence			

Figure 4. Spatial patterns

	day and night	dating back
photo sequence	 	 

Figure 5. Temporal patterns

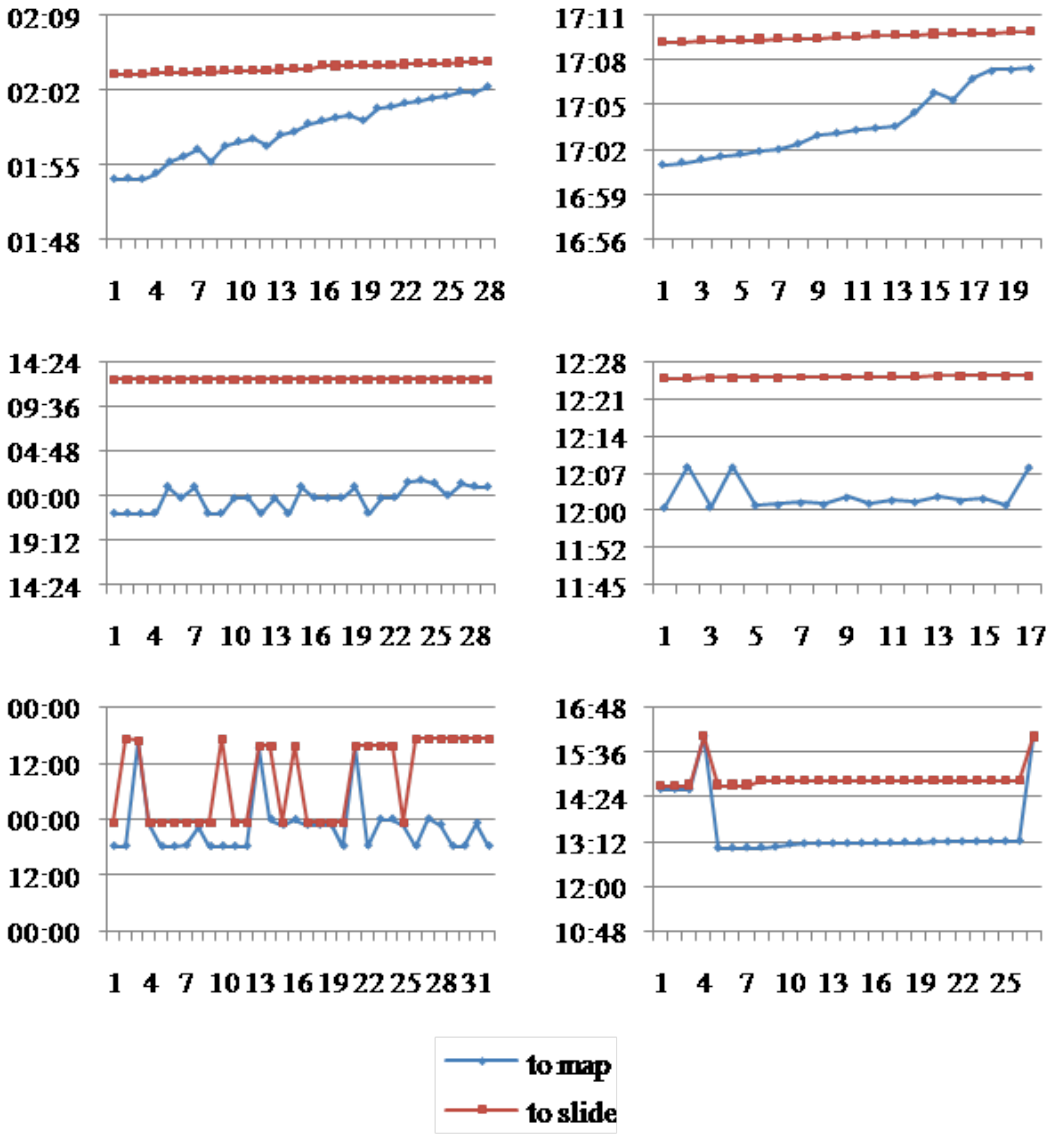

Figure 6. Process of slideshow creation

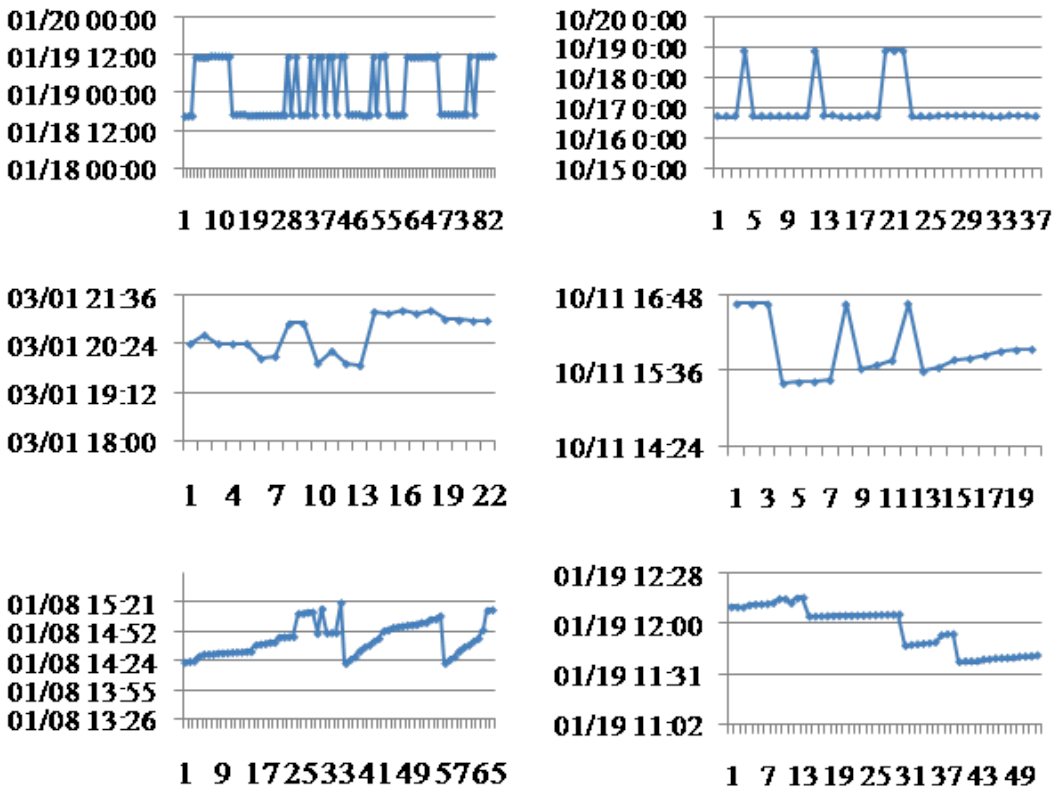

Figure 7. Slideshow sequence and shooting date/time

CONCLUSION AND FUTURE PLANS

Our user study results showed the important characteristics of the spatio-temporal structures of map-based stories, and the effectiveness of maps in the process by which user's edit their stories. Our future plan is to update our map-based slideshow editor based on the knowledge acquired in this study. We will also carry on further analysis of map-based storytelling with additional focus on scale, the articulation of a story, and semantic features, among other factors.

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