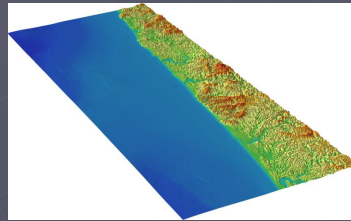
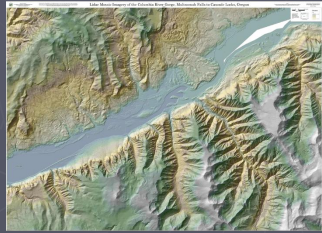


## Variables for Visualization



Tomoko Kanai  
GEOG 593

## Stages of Visualization

**Table 12.1 Variables at the Different Stages of Visualization**

<b>Stage</b>	<b>Variables in Use</b>				
Paper graphics	Visual variables	—	—	—	—
Computer graphics	Visual variables	Screen variables	—	—	—
Visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	—
Web-based visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	Web variables

## Visual Variables

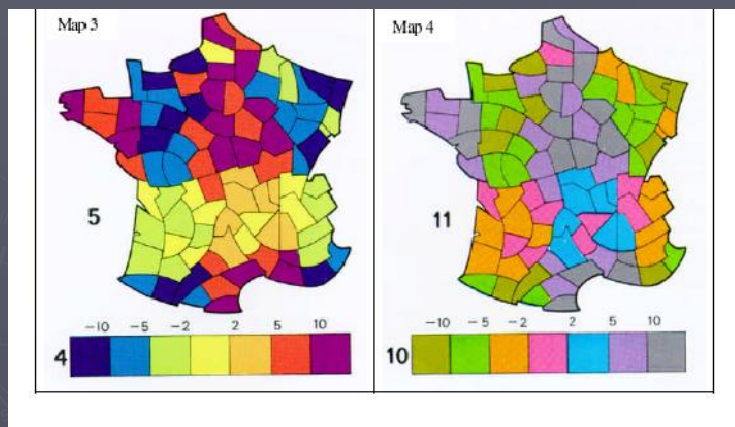
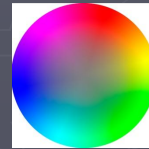
### Geometric variables

- Shape
- Size
- Orientation



### Color variables

- Hue
- Brightness
- Intensity

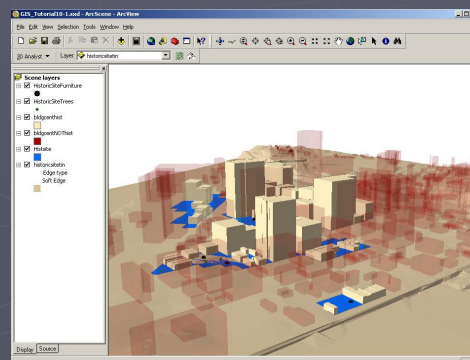
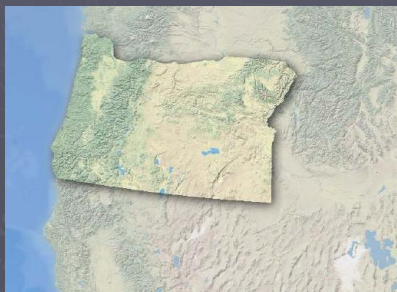


**Table 12.1 Variables at the Different Stages of Visualization**

Stage	Variables in Use				
Paper graphics	Visual variables	—	—	—	—
Computer graphics	Visual variables	Screen variables	—	—	—
Visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	—
Web-based visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	Web variables

## Screen variables

- Blur
- Focus
- Transparency



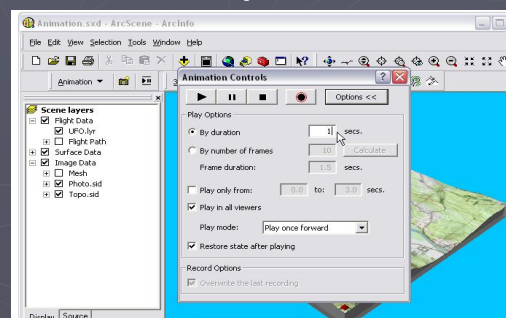
**Table 12.1 Variables at the Different Stages of Visualization**

Stage	Variables in Use				
Paper graphics	Visual variables	—	—	—	—
Computer graphics	Visual variables	Screen variables	—	—	—
Visualization	Visual variables	Screen variables	<b>Dynamic variables</b>	Exploratory acts	—
Web-based visualization	Visual variables	Screen variables	<b>Dynamic variables</b>	Exploratory acts	Web variables

## Dynamic variables

Related to animation

- Duration (time units for a scene)
- Rate of change (pace of animation)
- Order (the sequence of the frames)

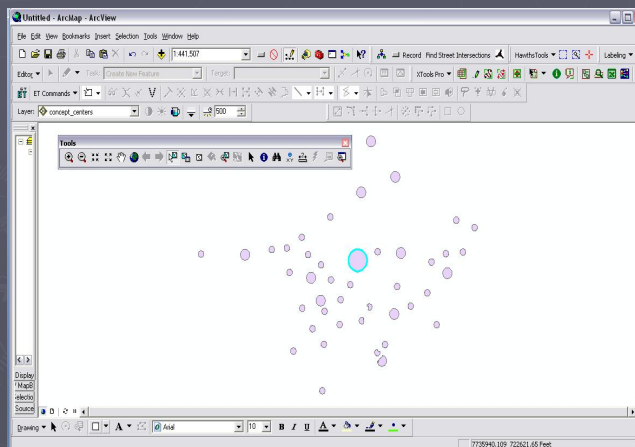


**Table 12.1 Variables at the Different Stages of Visualization**

Stage	Variables in Use				
Paper graphics	Visual variables	—	—	—	—
Computer graphics	Visual variables	Screen variables	—	—	—
Visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	—
Web-based visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	Web variables

## Exploratory acts

- Drag
- Click
- Zoom
- Pan
- Blink
- Highlight

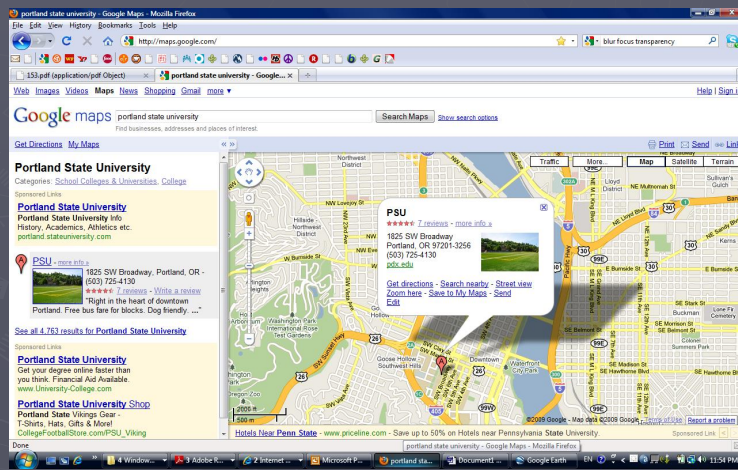


**Table 12.1 Variables at the Different Stages of Visualization**

Stage	Variables in Use				
Paper graphics	Visual variables	—	—	—	—
Computer graphics	Visual variables	Screen variables	—	—	—
Visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	—
Web-based visualization	Visual variables	Screen variables	Dynamic variables	Exploratory acts	Web variables

## Web variables

- Browse
- Plug-in



## References

Carpendale, M.S.T. Data is not available. Considering Visual Variables as a Basis for Information Visualization. Department of Commuter Science University of Calgary.

Web Cartography. Last accessed on 11/22/2009.

<http://kartoweb.itc.nl/webcartography/webbook/index1.htm>

Portland Marathon. 2009. Last accessed on 11/22/2009.

[http://www.portlandmarathon.org/details\\_course.php](http://www.portlandmarathon.org/details_course.php)

Oregon Partnership for Disaster Resilience. 2007 Annual Report. 2007. University of Oregon's Community Service Center.

Zhilin LI, Lilian PUN-CHENG and Geoffrey SHEA. Design of Web Maps for Navigation Purpose. Dept. of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University, Hong Kong