

Title	図形操作行動中のインタラクションにみられる共通性
Author(s)	谷部, 好子
Citation	
Issue Date	2001-03
Type	Thesis or Dissertation
Text version	author
URL	<a href="http://hdl.handle.net/10119/743">http://hdl.handle.net/10119/743</a>
Rights	
Description	Supervisor: 藤波 努, 知識科学研究科, 修士

# A Study on the Human Interaction with Impossible Figures

Yoshiko Yabe

School of Knowledge Science,  
Japan Advanced Institute of Science and Technology

February 13, 2001

**Keywords:** affordance, motion, vision, interaction, ambiguous figure, illusion.

I studied the interaction that comes up in the vision between motion and vision.

Preceding researches described that motions give information to vision and vision affects motions. If the information is erroneous, the creature that gets the information must act in wrong way. This study shows the occasion in which the creature can recognize the error and it handles to it.

I take an experimental approach. Subjects in the experiments are made to operate an ambiguous figure or made to see the someone's operations. The major part of this thesis is consisted in two parts. In the first part, I examine the motion's concealing of information from vision. In the second part, I go into one of the ways of concealing information that appeared in the former part.

The hypothesis in the first part is "Motions conceal the information from vision, if the information given from motion is conflicting and the conflicts are perceived easily." I observe the protocols, track eyes and count blinks. The subjects who are observed in the protocols remarked some views "fine" which components overlap each other. These views look flat and include little information about the impossible figure. The subjects of the later experiments blinked more frequently while they are watching the operations done by someone else than while they can operate by themselves.

The experiments in the second part was done under the results of the first part. In the first part, most subjects "persisted" some views which looks flat. About this persistence, I draw the hypothesis that this is an action to pick up affordances. If the hypothesis was correct, people must show the persistence almost independent of their visual experiences. So I make an experiment on children. They show the similar actions but do not show the discomforts shown in adults to the conflicts. Besides, to check that the means of images emerge in motions, I experimented in showing some static images of the figure's

views before starting and after finishing the operations. The images include the figure "persisted" in the experiments above. But the "persisted" figure is not preferred especially.

I describe that motion often conceals information from vision and tries to get the views that look representing something even a little. It is necessary for a physical security of a creature to prevent that it acts wrongly by its' misperceptions. Frequent blinks are the action to conceal the wrong information. The "persistence" are the action displaying the images which appear dramatically only when the operators try to display them intentionally, the action exploring the images which are physically impossible and valueless for creatures and catching the views from which the operators can see senses even a little.