**CONCEPT DEVELOPMENT**

**Development of concept of transitivity in Pre-operational stage children**

Ahuja Chaitanya, Gupta Pranjal

Department of Computer Science, Indian Institute of Technology Kanpur

---

**MOTIVATION**

As the child matures psychologically, he/she becomes competent to undertake certain tasks, which would have been difficult to understand before. The original research implies that the development of children's thinking is not smooth. There are certain regions in the timeline of a child, during which a transition to newly found capabilities occur. Although, this has been taken to imply that before these transition periods the child will be incapable of understanding things in a given way, some researchers argue that there is more to child's development than a mapping of timescales to capabilities. We argue that analogy can help judge the relational points and hence help in transitive understanding.

---

**OBJECTIVE**

Our objective is to test the role of analogy in transitive inferences. The basic idea of the study is to hide the three objects in the transitive inference task in boxes, so that their size is not perceptually available to the children, but at the same time to use draw bars as external physical representations of the ordering relation, so that the children do not have to remember the premises and also to improve the encoding of the relations hence, development of concept.

---

**RESULTS**

**Experiment #1**

- Number of Subjects: 10
- Average Age: 4.4 yr

The mean for the 'control-group' case is 2.2 which is significantly lower than the 'visual-objects' case which is 3.1. Clearly analogy relating the objects with a train-like structure is providing a better learning medium than plain abstract concepts.

Similar to Experiment-1, 'draw-bar + train' case performs better with a mean of 3.3 as compared to 2.2 mean for the 'control-group' case.

**Experiment #2**

---

**CONCLUSION**

The conclusion for the moment is that the train analogy helps children to successfully make transitive inferences when the relations are physically represented.

---

**REFERENCES**

- Can Analogy Help Children Make Transitive Inference? Milena Mutaftchieva Boicho Kokinov