Abstract  Concepts - Handedness

Introduction to Cognitive science course project

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Lefty? or Righty?

A new perspective on how we think
Motivation

• Our decisions are unconsciously biased
• One hypothesis states that this biasing depends upon the way we interact with our world. It is known as the body-specificity hypothesis
• This means that objects/concepts in opposite poles, (for example up and down) are judged differently

• A common explanation is the association of positive and negative ideas to up and down respectively in the vertical space, usually found in language
• This association is reasoned with the correlation between physical experiences and emotional states

A joyous person jumps  A sad person feels low
Abstract concepts

• Concepts which have no concrete definition and can vary are termed as abstract. E.g., Intelligent, beautiful, like, hate, good, bad.

• Across cultures and modalities, left is conventionally associated with bad and right with good.

• One possible explanation for this is due to innate neurobiological factors reinforced by culture and language.

• Another explanation is that body-specific associations between space and valence causes this.

• As right is usually the dominant hand, it follows from the hypothesis that right side of space will be associated with positive valence.
Methodology

• Subjects are required to perform a diagram task, in which they draw one animal in each of two boxes located either to the left and right of a cartoon figure (in the horizontal condition) or above and below a cartoon figure (in the vertical condition).

• Instructions indicate that the cartoon likes certain animals and dislikes some.

• Participants were instructed to draw a good animal in the box they thought best represented good things and a bad animal in the box that best represented bad things.
• In the second task, participants are instructed to judge the character of a fribble by circling the appropriate one.

• The fribbles are visually similar figures which are clearly distinguishable.

• In addition to the above tests, ocular dominance is also recorded (using Miles test) to find a correlation in the data.

Which Fribble looks less happy?  
Which Fribble looks more honest?
Results

- The tasks were performed by 12 individuals (men of the age group 18-20).
- Of these 12 subjects, 3 were left handed (25%) and rest were right handed (75%).
- The questionnaire took 3 min to complete on an average.
Results

- The attribution of qualities to aliens is found to more towards the dominant hand side.

Further Work

- More data needs to be collected to confirm the hypothesis.
- Ocular dominance, handedness and association of abstract concepts have to be correlated with each other.
References

• Daniel Casasanto “Embodiment of Abstract Concepts: Good and Bad in Right- and Left-Handers”

• The Edinburgh handedness Inventory- Oldfield, R.C. (1971). The assessment and analysis of handedness: The Edinburgh inventory. Neuropsychologia, 9, 97-113

• “Right Hand Left Hand-the origins of asymmetry in brains, bodies, atoms and cultures” by Chris McManus

Acknowledgements

I would like to thank the following people for their help and cooperation
• Prof. Amitabha Mukherjee for guiding me through the project
• Michael J. Tarr, Brown University, for providing the alien creature models (fribbles)
• The anonymous subjects without whom the project would be incomplete
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