Wason Selection Task

Each card has a letter on one side, and a number on the other.

E	**F**	**4**	**7**

Hypothesis: ‘If a card has a vowel on one side, it has an even number on the other side’.

Which card(s) should you select to test the hypothesis?

Wason Selection Task

E	**F**	**4**	**7**

Should turn over E and 7

- E could confirm the hypothesis
- 7 could disprove hypothesis
- the other cards have nothing to do with the hypothesis

P	Q	$P \rightarrow Q$	$\neg P \vee Q$
T	T	T	T
T	F	F	F
F	T	T	T
F	F	T	T

$$\begin{array}{rclrcl} P & = & \text{vowel} & Q & = & \text{even number} \\ \neg P & = & \text{consonant} & \neg Q & = & \text{odd number} \end{array}$$

Experimental Findings

- Results of 1970s study with 128 people: $\left\{ \begin{array}{rll} 5 & (3.9\%) & \text{chose E and 7} \\ 59 & (46.1\%) & \text{chose E or 7} \\ 42 & (32.8\%) & \text{chose E alone} \end{array} \right.$
- people do better with concrete examples when the hypothesis is about related things
  - E.g. if the letter is sealed then it has a 43-cent stamp on it
  - Not: if I eat haddock then I drink gin
- examples and explanation from Eysenck and Keane [2]

References

[1] Alan Dix, Janet Finlay, Gregory Abowd, and Russell Beale. *Human-Computer Interaction* (Second ed.). Prentice Hall Europe, 1998. © Pearson Education Limited. ISBN 0-13-239864-8. pages 36 – 40.

[2] Michael W. Eysenck and Mark T. Keane. *Cognitive Psychology: A Student's Handbook*. Lawrence Erlbaum Associates, 1990. ISBN 0-86377-154-8. LCC BF 311 E933 1990. pages 431 – 439.

[3] Douglas L. Medin and Brian H. Ross. *Cognitive Psychology*. Harcourt Brace Jovanovich College Publishers, 1992. ISBN 0-15-507872-0. pages 431 – 432.

[4] Valerie Stone. *Reasoning problems used in R.M. Study*. `http://www.du.edu/~vstone/decmak.htm`

[5] P.C. Wason and P. N. Johnson-Laird. *Psychology of Reasoning: Structure and Content*. Batsford, 1972. (Citation from Medin and Ross [3]).