

The perception of linguistic and non-linguistic inputs: The case of road signs

David Bowie, University of Central Florida Department of English
dbowie@pegasus.cc.ucf.edu
Jeanne Bowie, University of Central Florida Department of Civil,
Environmental, and Construction Engineering
jbowie@mail.ucf.edu

LACUS 2008
14 June 2008

LINGUISTIC AND NON-LINGUISTIC INPUTS

- > Stimuli are processed differently
- > Differences hold with auditory and visual stimuli

ROAD SIGNS

- > Always contain non-linguistic items (shape, color, symbol)
- > Often contain linguistic information
- > Information is often redundant

KEY QUESTION

- > Linguistic and non-linguistic components of road signs
 - > Are they processed differently?
 - > Does one override the other?
- > Do people know what combinations exist?
- > [Does redundancy reduce confusion?]
- > [How can road signs be improved for safety?]

THE SURVEY

- > 88 signs
 - > Meaning of the sign
 - > Places where the sign would be found
 - > Whether the sign was real
- > Questions could be skipped
- > Time was allowed for reflection
- > Blank signs were presented first

SIGNS WITH REDUNDANT SHAPE, COLOR, AND WORDS

- > Railroad crossing (white crossbuck)
- > One way (black-bordered white arrow)
- > Stop (red octagon)
- > Yield (red downward-pointing triangle)
- > Do not enter (red squared circle)

WORDS ANALYZED

- > White crossbuck: Railroad crossing, [blank]
- > Black-bordered white arrow: One way, stop, go, [blank]
- > Red octagon: Stop, yield, go, [blank]
- > Red downward-pointing triangle: Yield, stop, go, [blank]
- > Red squared circle: Do not enter, enter, [blank]

INTERPRETATIONS MATCHING WORDING ON SIGN

| | |
|--------------|-------|
| Do not enter | 97.3% |
| Stop | 95.4% |
| Yield | 93.7% |
| Go | 74.0% |
| Enter | 60.9% |

- > Apparent split between words found vs. not on real signs
- > However, no significant results

INTERPRETATIONS MATCHING SIGN SHAPE: WHITE CROSSBUCK

| | |
|-------------------|-------|
| Railroad crossing | 94.9% |
| [Blank] | 82.4% |

- > No significant results

INTERPRETATIONS MATCHING SIGN SHAPE: BLACK-BORDERED WHITE ARROW

| | |
|---------|-------|
| One way | 97.1% |
| Go | 100% |
| [Blank] | 95.8% |
| Stop | 20.0% |

- > Significant differences
- > Insignificant difference between expected text and blank sign

INTERPRETATIONS MATCHING SIGN SHAPE: RED OCTAGON

| | |
|---------|-------|
| Stop | 100% |
| [Blank] | 100% |
| Go | 30.8% |
| Yield | 25.0% |

- > Significant differences
- > Insignificant difference between expected text and blank sign

INTERPRETATIONS MATCHING SIGN SHAPE: RED DOWNWARD-POINTING TRIANGLE

| | |
|---------|-------|
| Yield | 95.5% |
| [Blank] | 87.0% |
| Stop | 28.6% |
| Go | 0.0% |

- > Significant differences
- > Insignificant difference between expected text and blank sign

INTERPRETATIONS MATCHING SIGN SHAPE: RED SQUARED CIRCLE

| | |
|--------------|-------|
| Do not enter | 100% |
| [Blank] | 63.9% |
| Enter | 44.4% |

- > Significant differences
- > Significant difference between expected text and blank sign

SO WHAT?

- > Linguistic content has an effect
- > Words reinforce non-linguistic inputs
- > Words can override non-linguistic inputs
- > Not all combinations of inputs act the same way

POINTS FOR FURTHER STUDY

- > The extent to which redundancy can reduce confusion
- > When it is acceptable to remove words from signs