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Israeli and American traffic signs similarities, differences and compliance with ergonomic principles of signs design

Tamar Ben-Bassat

Shamoon college of Engineering, Israel

What does this sign mean?

No Motorcycles

and this one…?

No Parking

T. Ben-Bassat

T. Ben-Bassat

Background

- Shinar, Dewar, Summala, and Zakowska (2003) compared sign comprehension of drivers of four different countries - Canada, Finland, Israel and Poland:
  - ❑ There are large differences among signs in their comprehension by the drivers.
  - ❑ Local traffic signs were understood by more people than non–local signs.

Background

- Ben-Bassat and Shinar (2006):

1. Familiarity is the most significant factor affecting road signs comprehension.

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1. Familiarity is the most significant factor affecting road signs comprehension.

   - *Familiarity* - The frequency of the sign in the road.

   - *Compatibility* - The correspondence between the sign and the message it represents.

   - *Standardization* - the extent to which the codes used for different dimensions like color and shape are consistent for all signs.

Background

- Ben-Bassat and Shinar (2006):

2. Significant correlations were found between comprehension level and two ergonomic design principles - compatibility and standardization.

The goal of this study

Compare Israeli road signs design (Vienna Convention) and American road signs design (MUTCD).

Vienna Convention   vs.   MUTCD

Method

- **<u>Five categories of signs</u>:**
  1. Similar in all aspects

Method

- Five categories of signs:
  2. Similar in shape and color but different in sign-content

Method

- ## <u>Five categories of signs:</u>

  3. Similar in sign-content
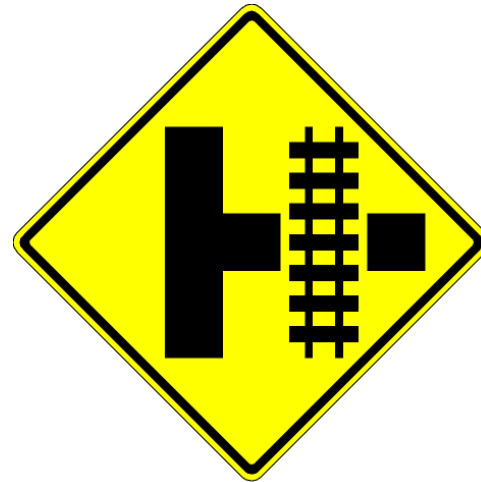   but different in shape and color

Method

- **<u>Five categories of signs</u>:**
    4. Different in all aspects

Method

- ## Five categories of signs:
  5. Exists only in one country (Israel or USA)

Results

1. Great variability in road signs design between Israel and USA

Method

- Rate 30 signs according to two ergonomic principles:

  - Sign-content compatibility
  - Standardization (according to Israel standard)

  - *Participants*: human factors and ergonomics students

Results

2. Variability in compliance to ergonomic principles.

High compliance   Low compliance

Conclusions

- Great differences between Israel and USA in road design.

- Different standards between Vienna convention and MUTCD.

- Can create difficulty among tourist drivers to understand local signs.

Future research

- Test traffic signs' meaning among American drivers:
  - Similar in all aspects
  - Similar in shape and color but different in sign-content
  - Similar in sign-content but different in shape and color
  - Different in all aspects
  - Exists only in one country

Thank you!

Tamar Ben-Bassat – tamarbe@sce.ac.il