Are you convinced?
A wizard of Oz study to test emotional vs. rational persuasion strategies in dialogues

Rachel F. Adler, Francisco Iacobelli, Yehuda Gutstein
Northeastern Illinois University
Outline

Persuasive Strategy

Positive

\[ \lor \]

Negative
Outline

Persuasive Strategy

Emotional > Rational

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Outline

Persuasive Strategy

Which one is the best?

Emotional Positive (EP)  Rational Positive (RP)

Emotional Negative (EN)  Rational Negative (RN)
## Backgrounds

### Captology:

Study of computers as persuasive technologies

to help people make healthy lifestyle

<table>
<thead>
<tr>
<th>Emotional Positive (EP)</th>
<th>Rational Positive (RP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Negative (EN)</td>
<td>Rational Negative (RN)</td>
</tr>
</tbody>
</table>
Research Goal

a) Find the best persuasion strategies

b) Produce framework of persuasive dialog system
Related Works

1. emotion
2. logic
3. reward
4. punishment

Human - Human

1. reward
2. punishment
3. logic
4. emotion

Human - Computer

Related Works

- **Positive information**
  “eating fruits and vegetables is good for health”

- **Negative information**
  “eliminating fruits and vegetables from diet may have detrimental effects on your health

**Emotional**

ex. “you are a clever cook”

**Rational**

discussed effects / facts

→ Emotional Positive dialogues were the best

Hypothesis

a) Emotional persuasive strategy will be more successful than a rational one

b) Emotional Positive statements will be the most persuasive compared to the other strategies
Methods

• A Wizard of Oz

Wizard select strategies
If participant seemed interested: keep current strategy
else: switch strategies

Tai Chi (太極拳) helps with your cognitive and memory abilities.
• Starting with random strategy (EP or RP)
• Wizards were well-trained
Screenshot of Test Conversation

Fig. 1. Wizard’s interface.

Fig. 2. Participant’s interface.
Evaluations

• Pre- / Post-chat Questionnaire

  a) I feel the need to exercise more often

  b) I am interested in learning tai chi

• Percentage of who printed a flyer about Tai Chi
Persuasive Statements

1. Collect the fact benefits of training Tai Chi

2. Record dialogues
   tried to persuade someone to practice Tai Chi

3. The records turn into 7 dialogue statements

4. 7 dialogues statements were rewritten in 4 versions (EP, EN, RP, RN)
Examples: rewritten in 4 versions

Rational Positive
• Some people are good at memorization when taking exams. How would you rate your memory abilities?

Emotional Positive
• Some people have great memories! Others can’t ever remember what they had for breakfast. How well would you rate your memory?

Rational Negative
• Some people have trouble with all the memorization when taking exams. How would you rate your memory?

Emotional Negative
• Most people aren’t very good at memorization. Just think of how many people can’t even remember what they had for breakfast! How bad would you rate your memory?
Results

After the chat, participants’ interest in learning Tai Chi increased.
Results

46% of participants had an increase in their interest level of Tai Chi and printed a flyer.

Table 2
Persuasion success. Totals and the total for those who both increased their Tai Chi interest and printed a flyer can be found in bold.

<table>
<thead>
<tr>
<th>Tai Chi interest</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Remained the Same</td>
<td>9</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Increased</td>
<td>6</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>36</td>
<td>52</td>
</tr>
</tbody>
</table>
Test of Hypotheses

a) Emotional strategy will be more successful than a rational one

b) Emotional Positive statements will be the most persuasive

Table 3
Correlation between strategies used and interest in Tai Chi in the pre- and post-chat questionnaires.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Tai Chi interest (pre)</th>
<th>Tai Chi interest (post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>0.12</td>
<td>0.29*</td>
</tr>
<tr>
<td>RP</td>
<td>0.06</td>
<td>0.19</td>
</tr>
<tr>
<td>EN</td>
<td>-0.27</td>
<td>-0.56***</td>
</tr>
<tr>
<td>RN</td>
<td>-0.33*</td>
<td>-0.49**</td>
</tr>
</tbody>
</table>

*p < 0.05 **p < 0.001 ***p < 0.0001.
Conclusions

Emotional Positive is more successful persuasion than Rational Positive

Future Work

• Apply these same persuasive strategies to a different task
• Many of participants were students, the results may not be applicable to different types of individuals