The role of social stereotypes in irony comprehension in ASD

Both social and communication impairments are part of the essential diagnostic criteria used to define autism spectrum disorders (ASD). These impairments are often related to a serious deficit of the capacity for mentalization, the natural tendency to explain everyday life actions in terms of mental states that caused them (Happé 1993, 1994, Jolliffe–Baron-Cohen 1999). High-functioning autism (HFA) and Asperger Syndrome (AS) are variants of ASD, which share such impairments but are characterized by absence of mental retardation. Despite these severe social impairments, recent findings have shown that adults with autism spectrum impairment tasks (Chevallier et al. 2011) but a weakness in integrating them with social stereotypical knowledge (Ervas et al. prep.).

Research questions:
Does gender stereotype priming facilitate irony comprehension? How does it influence attitudinal content interpretation?

Irony comprehension and epistemic vigilance

Recent studies have hypothesised that we need a developed capacity to be epistemically vigilant in order to filter out misinformation and distinguish lies (Mascaro–Sperber 2009) from irony (Wilson 2009). A fully-fledged capacity to be epistemically vigilant should comprise the following aspects: 1) an affective aspect involved in attending to malevolence; 2) an epistemic aspect involved in attending to falsity; and 3) a mindreading aspect involved in attending speaker’s intention. HFA/AS individuals seem to have difficulties in justifying their mental state answers and, more precisely, they tend to explain agent’s behavior in terms of malicious intentions (Zalla et al. 2009). They appear to be unaware of the affective impact, but sensible to social rule violations.

Aim of the study:
Assess whether (1) social stereotypical knowledge; (2) propositional and non-propositional attitudinal contents facilitate both comparison and HFA/AS groups in grasping the affective aspect of verbal irony.

Method and materials

Recent attitude and stereotype priming research shows that listeners are sensitive to affective aspects of attitudinal meaning in communication, even at sub-attributive level, and the way they feel about communicative contents does rapidly and non-trivially modulate language comprehension as it unfolds (Bargh 2007, Van Berkum 2010). In two experimental studies we test the combined effects of attitude and gender stereotype priming on attitudinal meaning comprehension in ironic and non-ironic conditions. Stereotype-related effect will be activated by an implicit association test-semantic and picture priming, which will precede irony comprehension task and will display both gender-stereotypic and gender-neutral semantic prime or picture attribute in four different conditions: female positive; female negative; male positive; male negative. A control condition group, where participants will have no priming effect, is planned.

The materials are a set of 16 stories (8 male / 8 female speaker), combining a positive/negative context with a positive/negative comment. Each story set gives four experimental combinations of context/comment:

- (+)/+ (+) Implicit, indirectly negative attitude/critical irony; 1) (+)/+ Implicit, indirectly positive attitude/praising irony; 3) (+)/+ Explicit, literally positive attitude.
- (-)/- (-) Explicit, literally negative attitude.

Experimenting with gender stereotypes...

We chose to focus on gender stereotypes because they are usually validated with female stereotypes and the existing data shows a role in interpreting irony, at least for the latter (Dovidio et al. 2002).

Norming studies

A total of 206 participants (103 women;103 men) took part in five norming studies. Gender stereotype triggers for semantic priming...

Two norming studies were designed to construct gender stereotypic personality traits. The aim of the first norming study was to identify two lists of adjectives describing gender communicative attitudes that have stereotypical association with women (e.g. polite, gossipy, indirect) and men (e.g. patient, rude, direct, etc.). Participants: 38 women and 38 men.

The aim of the second norming study was to assess the valence and the gender typicality of communicative attitude adjectives. The adjectives obtained in the first norming study were rated on 7-point scales in two dimensions: (a) the negativity/criticality of each trait (1=very negative and 7=very positive; 4=neutral) and (b) the gender typicality of each behavior, femininity/masculinity typically (forced choice: female/male). Participants: 20 women and 20 men.

...and for picture priming:
A set of male/female positive/negative/neutral pictures was selected from the “NimStim set of facial expressions” (Tottenham et al. 2009) already validated in terms of valence.

Irony comprehension task:
The stories were matched according to the following features: 1) Target words of the stories record valence (familiarity, length and frequency (National corpus for French language “FranText”); 2) Contexts of the stories: context length and valence; expectancy for the last word in the context. We checked for the words and contexts length and other two norming study were designed.

The third norming study asked to judge the valence and familiarity for target word and valence for contexts. Participants: 15 women and 15 men.

The fourth norming study asked to complete each story with one word that first comes to mind (cloze test). Participants: 15 women and 15 men.

Experimenting with gender stereotypes...

Semantic priming:

<table>
<thead>
<tr>
<th>Male</th>
<th>RUDE</th>
<th>Neutral</th>
<th>Positive</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>WORD</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irony comprehension task:
Is the person expressing the comment being nice or mean?

The fifth norming study was planned to assess whether the character pronouncing the comment was:
1) nice or mean;
2) polite or impolite;
3) ironic or literal.
Participants: 15 women and 15 men.

...and preliminary results of norming studies:

Selected references:

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