Speech Acts, Facial Expressions and Gender Bias

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SPEECH ACTS
“...the business of a sentence is not only to describe some state of affairs but also to perform other kinds of *speech acts*”
“Mark is studying”
“Mark is studying”
“Mark is studying”

Illocutionary Force
“Mark is studying”

**Illocutionary Force**

**Assertion**

“Mark is studying”
“Mark is studying”

**Illocutionary Force**

**Assertion**  
“Mark is studying”

**Question**  
“Is Mark studying?”
"Mark is studying"

Illocutionary Force

Assertion  “Mark is studying”
Question   “Is Mark studying?”
Order      “Mark, study!”
“Mark is studying”

Illocutionary Force

Assertion  “Mark is studying”
Question   “Is Mark studying?”
Order      “Mark, study!”
Suggestion “Mark… study…”
“Mark is studying”

Illocutionary Force

Assertion  “Mark is studying”
Question   “Is Mark studying?”
Order      “Mark, study!”
Suggestion “Mark… study…”

... ...
Illocutionary force-indicating devices (IFIDs)

Linguistic element that indicates or delimits the illocutionary force of an utterance

(Searle 1969, Searle & Vanderveken 1985)
Linguistic IFIDs

Semantics, Syntax, Phonology.
Non-verbal IFIDs?

..multimodal process that often involves the computing of non-verbal signals.

*Gestures* (Dresner & Herrig 2010, Kendon 2004)
*Gaze* (Argyle & Cook 1976, Poggi & Pelachaud 2001)
*Mouth* (Cosi & Perin 2002)
Non-verbal IFIDs?

..multimodal process that often involves the computing of non-verbal signals.

*Gestures* (Dresner & Herrig 2010, Kendon 2004)

*Gaze* (Argyle & Cook 1976, Poggi & Pelachaud 2001)

*Mouth* (Cosi & Perin 2002)
PREVIOUS WORK

FAC S - Facial Action Coding System

(Ekman & Friesen 1978)
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The facial muscular activity is coded in the form of a combination of Action Units (AUs)

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FACS - Facial Action Coding System

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Facial expressions described in terms of discrete AUs and combinations of AUs.

(Ekman & Friesen 1978)
Upper AUs

We focused our attention on the *Upper face AUs*

<table>
<thead>
<tr>
<th>NEUTRAL</th>
<th>AU 1</th>
<th>AU 2</th>
<th>AU 4</th>
<th>AU 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes, brow, and cheek are relaxed.</td>
<td>Inner portion of the brows is raised.</td>
<td>Outer portion of the brows is raised.</td>
<td>Brows lowered and drawn together</td>
<td>Upper eyelids are raised.</td>
</tr>
<tr>
<td>AU 6</td>
<td>AU 7</td>
<td>AU 1+2</td>
<td>AU 1+4</td>
<td>AU 4+5</td>
</tr>
<tr>
<td>Cheeks are raised.</td>
<td>Lower eyelids are raised.</td>
<td>Inner and outer portions of the brows are raised.</td>
<td>Medial portion of the brows is raised and pulled together.</td>
<td>Brows lowered and drawn together and upper eyelids are raised.</td>
</tr>
<tr>
<td>AU 1+2+4</td>
<td>AU 1+2+5</td>
<td>AU 1+6</td>
<td>AU 6+7</td>
<td>AU 1+2+5+6+7</td>
</tr>
<tr>
<td>Brows are pulled together and upward.</td>
<td>Brows and upper eyelids are raised.</td>
<td>Inner portion of brows and cheeks are raised.</td>
<td>Lower eyelids and cheeks are raised.</td>
<td>Brows, eyelids, and cheeks are raised.</td>
</tr>
</tbody>
</table>
Domaneschi et al. (2017)

ASSERTION  “Mark is studying”

QUESTION  “Is Mark studying?”

ORDER  “Mar, study!”

(Levinson 1983)
Domaneschi et al. (2017)

EXPERIMENT 1 – Production
EXPERIMENT 1 – Production

ITALIAN

Assertion: So che Marco studia
Question: Una domanda: Marco studia?
Order: È un ordine: Marco studia!!

ENGLISH Tr.

Assertion: I know that Marco studies
Question: Una domanda: Marco studia?
Order: È un ordine: Marco studia!
**Italian**

*Assertion:* So che Marco studia  
*Question:* Una domanda: Marco studia?  
*Order:* È un ordine: Marco studia!!

**English Tr.**

*Assertion:* I know that Marco studies  
*Question:* Una domanda: Marco studia?  
*Order:* È un ordine: Marco studia!!
Domaneschi et al. (2017)

EXPERIMENT 2 – Comprehension – Selection Task
Domaneschi et al. (2017)

EXPERIMENT 2 – Comprehension – Selection Task
Domaneschi et al. (2017)

EXPERIMENT 2 – Comprehension – Selection Task
Domameschi et al. (2017)

EXPERIMENT 3 – Comprehension – Rating Task
Domaneschi et al. (2017)

EXPERIMENT 3 – Comprehension – Rating Task
Domaneschi et al. (2017)

EXPERIMENT 3 – Comprehension – Rating Task
## RESULTS

<table>
<thead>
<tr>
<th>ASSERTION</th>
<th>“Mark is studying”</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUESTION</td>
<td>“Is Mark studying?”</td>
</tr>
<tr>
<td>ORDER</td>
<td>“Mar, study!”</td>
</tr>
</tbody>
</table>

(Domaneschi et al. 2017)
GENDER BIAS?
RESEARCH QUESTION

It is plausible to predict that this peculiar pattern of associations between *Speech acts* and *Upper-face AU*s could be affected by individual characteristics of the actor that performs the speech act.

Is understanding speech acts affected by the *gender* of the actor?
PREDICTION
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Our main prediction results from an integration of the linguistic literature on speech acts and the social psychological research on gender roles and stereotypes:
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Linguistic

Preparatory rules
Assertions & Questions  \( S = H \)
Orders  \( S > H \)

(Searle 1975)
PREDICTION

Our main prediction results from an integration of the linguistic literature on speech acts and the social psychological research on gender roles and stereotypes:

Social-role theory

(Eagly & Wood, 1999; Eagly, Wood, & Diekman, 2000)
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Social-role theory

Gender stereotypes arise from the characteristics associated with the roles that men and women typically fill in a given society.

(Eagly & Wood, 1999; Eagly, Wood, & Diekman, 2000)
PREDICTION

Our main prediction results from an integration of the linguistic literature on speech acts and the social psychological research on gender roles and stereotypes:

Social-role theory

Gender stereotypes arise from the characteristics associated with the roles that men and women typically fill in a given society.

In most of the western societies, men hold positions that are viewed as more powerful and agentic than those hold by women, whereas women occupy positions that are perceived as more subordinate and passive than those occupied by men

(Eagly & Wood, 1999; Eagly, Wood, & Diekman, 2000)
PREDICTION

Perceivers would be less likely to associate the illocutionary force of the order with the corresponding facial expression (i.e., AU4+5) when it is displayed by women rather than by men.
EXPERIMENT
Methods – Selection task

- 195 Participants
  \( N = 152; \ 105 \text{ females}; \ \text{age} = 27.17 \pm 8.24, \ \text{range} = 18-64 \)

- 16 Pics (8 males, 8 females)

- 40 Items (3 target sentences + 2 distractors)

- 5 AUs:

<table>
<thead>
<tr>
<th>Null</th>
<th>AU 4+5</th>
<th>AU 2</th>
<th>AU 1+4</th>
<th>AU 4+7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes, brow, and cheek are relaxed</td>
<td>Brows lowered and Upper lids raised</td>
<td>Outer portion of the brows is raised</td>
<td>Medial portion of the brows is raised and pulled together</td>
<td>Brows lowered and lids tightened</td>
</tr>
</tbody>
</table>

  Assertion | Orders | Questions | Ambiguous
RESULTS
RESULT 1: Orders

<table>
<thead>
<tr>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>Null</td>
</tr>
<tr>
<td>AU 4+5</td>
<td>AU 4+5</td>
</tr>
<tr>
<td>AU 1+4</td>
<td>AU 1+4</td>
</tr>
<tr>
<td>AU 2</td>
<td>AU 2</td>
</tr>
<tr>
<td>AU 4+7</td>
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</table>

**Assertion:** “Mark is studying”

**Question:** “Is Mark studying?”

**Order:** “Mark study!”
RESULT 1: Orders

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<tr>
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<td>AU 2</td>
</tr>
<tr>
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Assertion: “Mark is studying”

Question: “Is Mark studying?”

Order: “Mark study!”

Express4+5:ActorSex1 0.045815 *
RESULT 1: Orders

Express4+5:ActorSex1 0.045815 *

Assertion: “Mark is studying”

Question: “Is Mark studying?”

Order: “Mark study!”
**RESULT 2: Questions**

**Assertion:** “Mark is studying”

**Question:** “Is Mark studying?”

**Order:** “Mark study!”

Express4+5:ActorSex1 0.00397 **
RESULT 2: Questions

<table>
<thead>
<tr>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>Null</td>
</tr>
<tr>
<td>AU 4+5</td>
<td>AU 4+5</td>
</tr>
<tr>
<td>AU 1+4</td>
<td>AU 1+4</td>
</tr>
<tr>
<td>AU 2</td>
<td>AU 2</td>
</tr>
<tr>
<td>AU 4+7</td>
<td>AU 4+7</td>
</tr>
</tbody>
</table>

Assertion: “Mark is studying”

Question: “Is Mark studying?”

Order: “Mark study!”

Express4+5:ActorSex1 0.00397 **
RESULT 3: Assertion

<table>
<thead>
<tr>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>Null</td>
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<td>AU 4+5</td>
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</tr>
<tr>
<td>AU 1+4</td>
<td>AU 1+4</td>
</tr>
<tr>
<td>AU 2</td>
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</tr>
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</tbody>
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**ActorSex1** 0.0331 *

**Assertion:** “Mark is studying”

**Question:** “Is Mark studying?”

**Order:** “Mark study!”
RESULT 3: Assertion

**ActorSex1** 0.0331 *

**Assertion:** “Mark is studying”

**Question:** “Is Mark studying?”

**Order:** “Mark study!”
DISCUSSION
Gender Effect

Orders + AU4+5

> probability: men performers of orders
> probability: women performers of questions.

Assertions

> probability: men performers of assertions
ORDERS + AU4+5
Freedom of Speech and Gender Bias

The deprivation of the freedom of a speech: *illocutionary potential*

(Hornsby 1993; Langton 1993)

E.g.

**Pornography**: women are deprived of their illocutionary potential.

Women are perceived as mere sexual objects via a process of subordination that silences them and limits their illocutionary potential to a restricted range of illocutionary types, e.g. agreeing, accepting, etc.

(Bianchi, 2008; Hornsby, 2000; West, 2003)
Freedom of Speech and Gender Bias

Claim: Data collected suggest that multimodal communication is affected by a gender bias which associates different illocutionary potentials respectively to men and women.

In particular, such a difference reflects a process of women’s subordination.
Freedom of Speech and Gender Bias

Preparatory conditions: Orders vs. Questions

Order: hierarchical superiority of the S on the H
Question: admits an equal status of S/H

(Austin, 1962; Searle, 1975)
Freedom of Speech and Gender Bias

Our results show that the interpretation of orders reflects a representation of women as having less power than men and as holding a subordinated hierarchical position.
Freedom of Speech and Gender Bias

When considering male vs. female speakers, therefore, the perception of this hierarchical position seems to be biased by the (aforementioned) gender stereotypes permeating past and today’s western societies.
Freedom of Speech and Gender Bias

This result, therefore, might provide further support about the idea that men’s higher social status is translated into men’s privileges in speech.

(Eckert & McConnell-Ginet 2003)
ASSERTIONS
Assertions

Women < performers of assertions than men, independently of the non-verbal marker associated with the production of a speech act and, in particular, with AU0.
Assertions

Women are usually recognized as more tentative than men in actual speech

(Lakoff 1975)
Assertions

Lakoff (1975), for example, has shown that women tend to be less assertive than men and are more inclined to replace illocutionary forces like assertions that involve a demanding epistemic commitment, with, for example, tag questions.
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“The train is at 2.00pm” vs “The train is at 2.00pm, isn’t it?”
CONCLUSION
What if this story is true?

Stereotype-consistent interpretations of men’s and women’s speech acts might have implications for the social roles that people occupy, by contributing to maintain gender inequalities.

For example, when women occupy leading positions in a working organization, their act of expressing orders may be affected by gender stereotypes and thus may be misunderstood by their subordinates.

Such a process could reinforce the belief that women are unable to perform orders and to hold the dominant social position required for the execution of an order, reproducing in this way a gender inequality.
THANKS!