Cognitive and social aspects of adaptation to a communication partner

Kristina Thiele[1,3], Anouschka Foltz [1,2], Marieluise Bartels [1,2], Dunja Kahsnitz [1,2] & Prisca Stenneken [1,2,3]

[1] Clinical Linguistics, Bielefeld University; [2] Collaborative Research Center 673 "Alignment in Communication", Bielefeld University; [3] Center of Excellence "Cognitive Interaction Technology" (CITEC), Bielefeld University

CITEC
Cognitive Interaction Technology
Center of Excellence
Bielefeld University

Introduction

➢ Communication is a socially highly relevant form of joint action (Hanna & Brennan, 2009).
➢ Well-studied phenomenon: Speakers verbally adapt to each other (Branigan et al., 2005; Bortfeld & Brennan 1997), e.g. by using identical lexical terms / syntactic structures.
➢ Adaptation can be found on various linguistic levels (e.g. lexical, syntactic).
➢ Adaptation may contribute to communicative success (Pickering & Garrod, 2004).
➢ Studies suggest that the interlocutor's perceived language skills affect adaptation rates (Ivanova et al., 2007; Branigan et al., in press). But what about other factors?
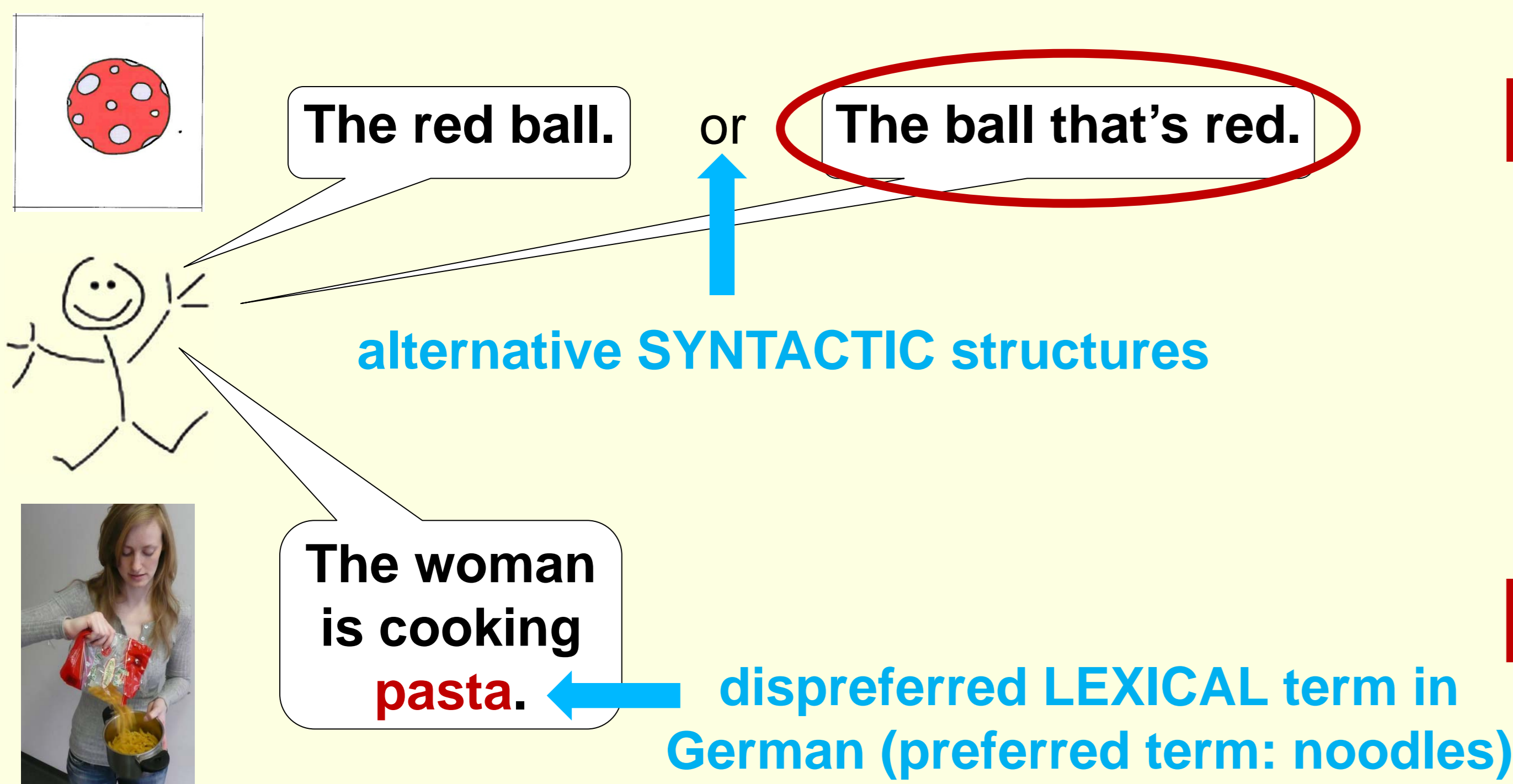
Research Question:
➢ To what extent do speakers' linguistic skills and cognitive capacities influence syntactic adaptation?
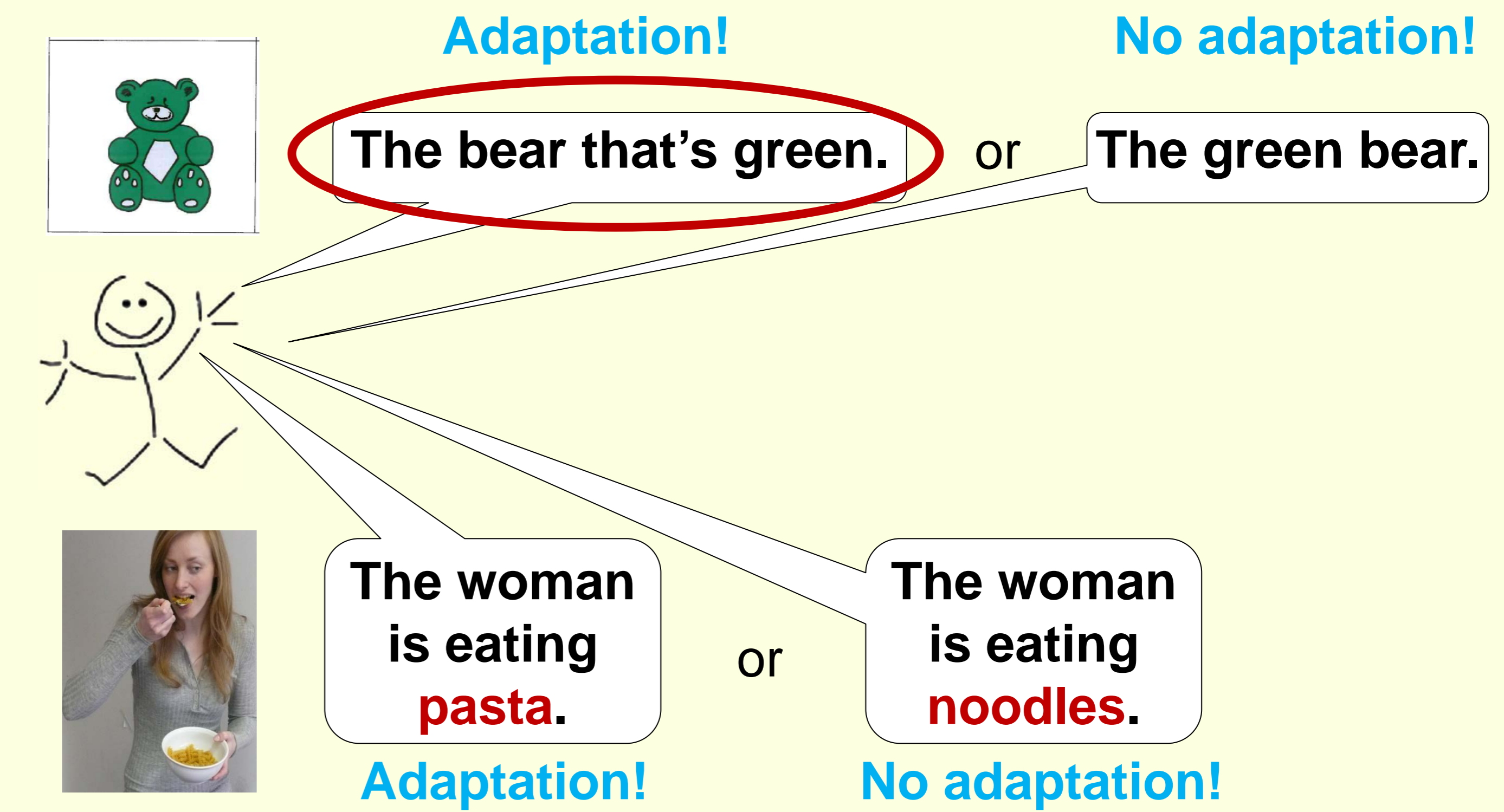➢ To what extent do social and situational aspects influence lexical adaptation?

Larger tip.   Smaller tip. (cf. van Baaren et al., 2003)
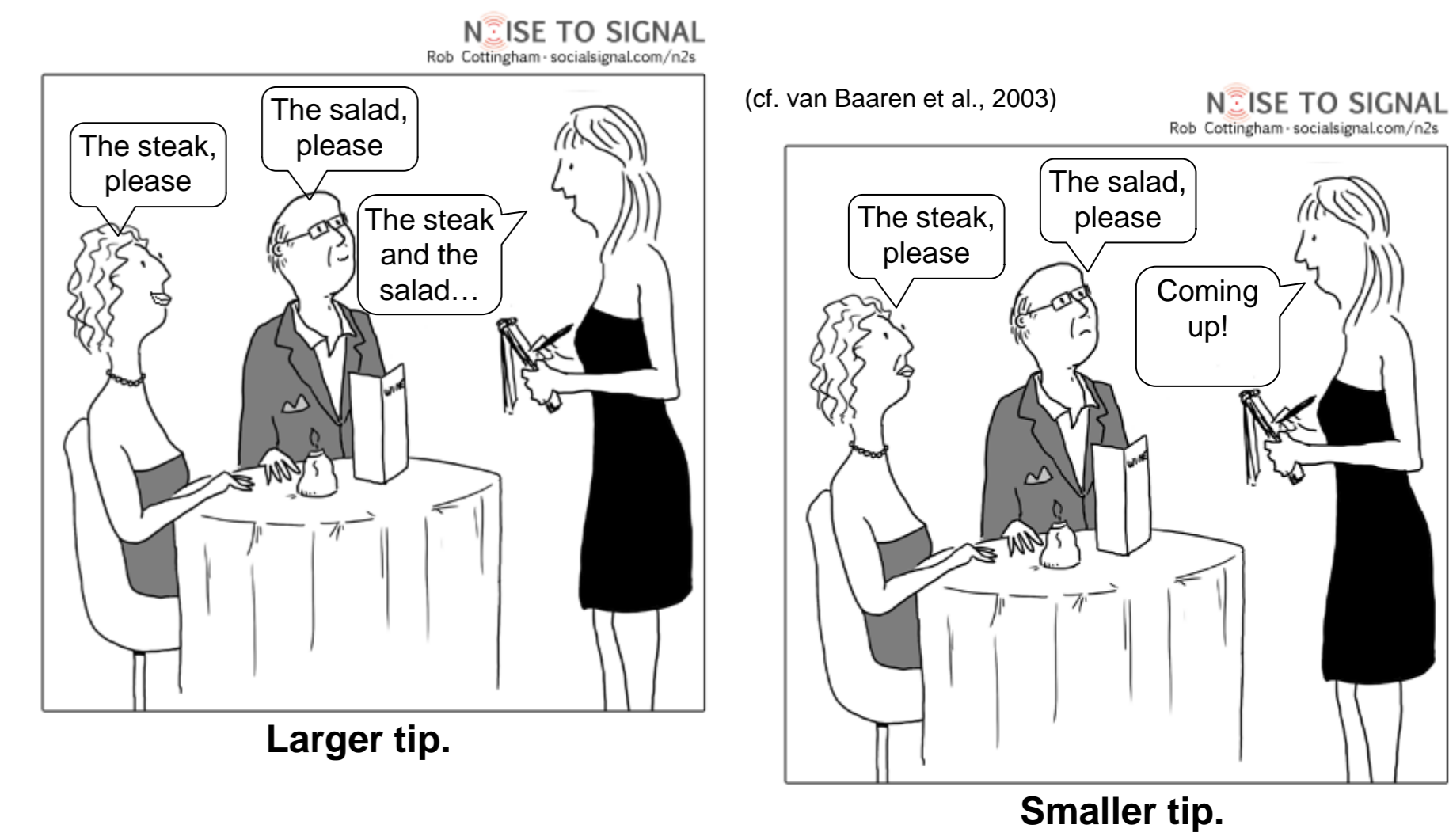
Confederate Scripting to Study Adaptation
(Branigan et al. 2000)

1. Confederate describes prime picture

The red ball. or The ball that's red.

alternative SYNTACTIC structures

The woman is cooking **pasta**.

dispreferred LEXICAL term in German (preferred term: noodles)

2. Participant describes target picture

Adaptation!   **No adaptation!**

The bear that's green. or The green bear.

The woman is eating **pasta**. or The woman is eating **noodles**.

Adaptation!   **No adaptation!**

Experiment 1

Syntactic adaptation in children: Morpho-syntactic abilities vs. working memory capacity?

➢ **Participants** 19 (12 male, 7 female) native German-speaking children (*mean age* = 4;9; *SD* = 0;5)
➢ Confederate scripting with alternative syntactic structures.
Additional Tests
➢ Taken from three standardized and norm-referenced language-development test batteries
➢ Morpho-syntactic abilities (mean score of five tests)
➢ Working memory (mean score of four tests)

Results

➢ Children adapted to both prime structures, but reliably more to "the red ball" (Figure 1, $p < 0.01$).
Interesting: Adaptation to the more complex syntactic structure ("the ball that's red")!
➢ Morpho-syntactic abilities: No effect of adaptation to complex structure (Figure 2).
➢ Working memory: Effect of adaptation to complex structure: Higher working memory capacity = more adaptation; lower working memory capacity = less adaptation (Figure 2, $p < 0.05$).
Preliminary analyses:
➢ When taking children's age into account: Same effect of working memory capacity.
  ➢ BUT also effect of morpho-syntactic abilities: Higher morpho-syntactic skills = LESS adaptation; lower morpho-syntactic skills = MORE adaptation.
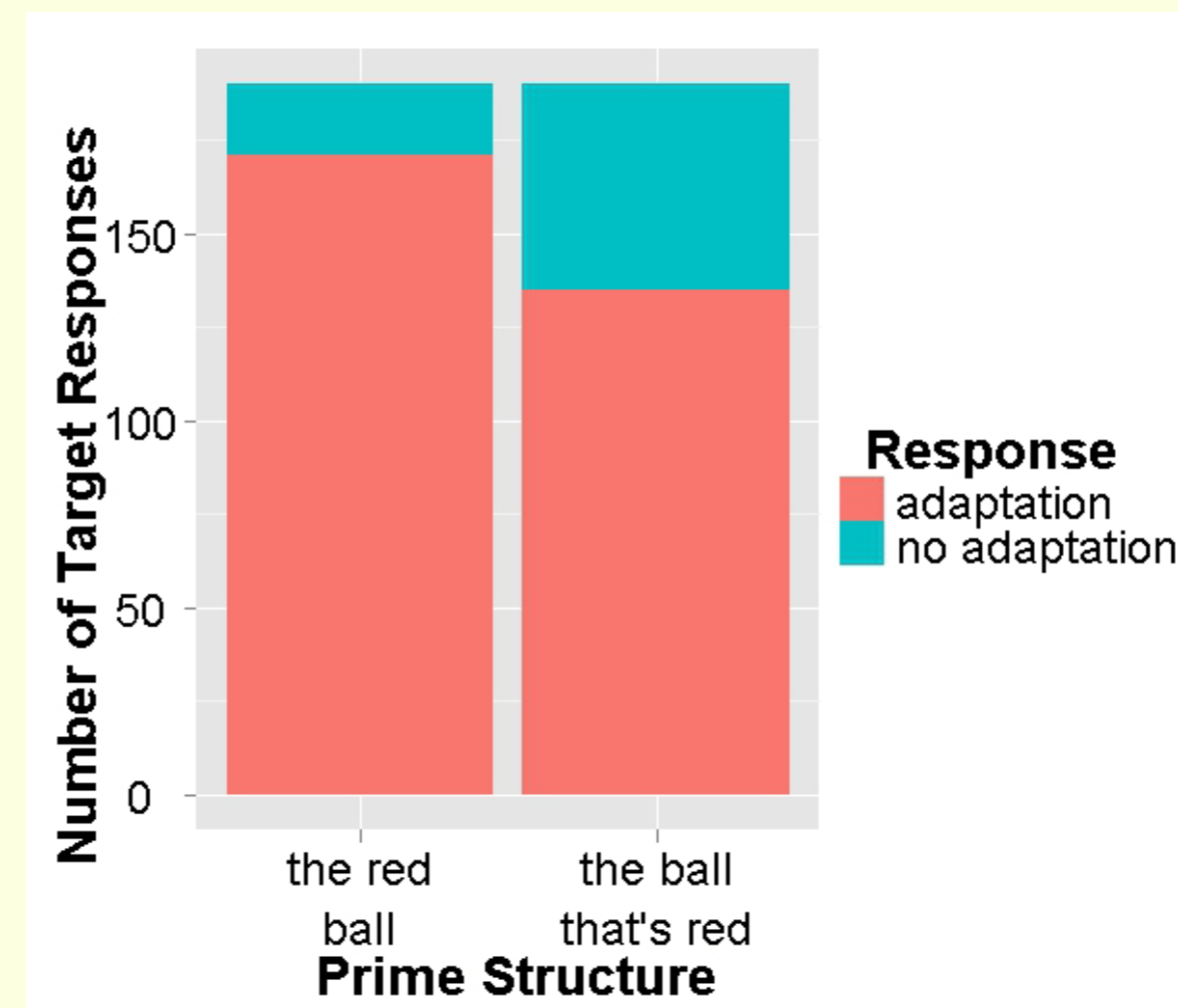

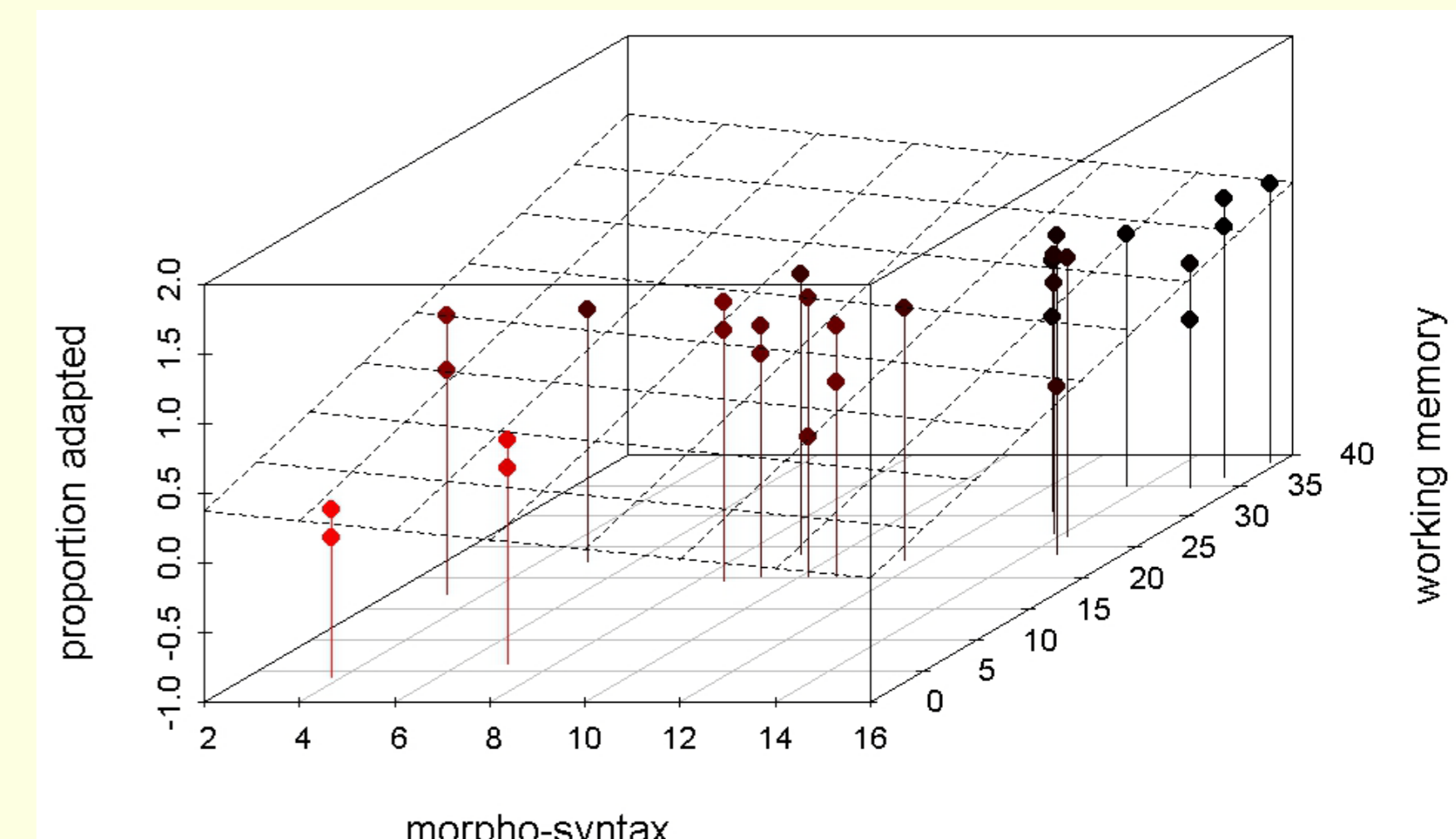**Figure 1:** Adaptation in children's responses.

Figure 2: 3D-scatterplot showing the relationship between morpho-syntactic skills, working memory capacity, and adoption rates.

Experiment 2

Lexical adaptation in adults: Perceived language skills vs. situational pleasantness vs. personal closeness?

➢ **Participants** 23 (12 male, 11 female) native German-speaking Bielefeld University students (*mean age* = 25.30; *SD* = 5.33)
➢ Confederate scripting with dispreferred lexical terms and two different confederates (native vs. non-native German speaker)
Additional Tests
➢ Picture description pretest to determine lexical preference of experimental prime words
➢ Questionnaire asking about: confederates' perceived language skills, situational pleasantness, personal closeness to confederate

Results

➢ The use of a dispreferrred lexical term can be experimentally induced: Participants produced reliably more dispreferred terms in the experiment compared to the pretest (Figure 3, $p < .001$)
➢ Marginal effect of confederates' identity on dispreferred term adoption rates: Numerically higher adoption rates with the non-native compared to the native confederate ($p < .1$).
➢ Reliable positive correlation between perceived personal closeness and dispreferred-term adoption rates: High personal closeness = more adoption; low personal closeness = less adoption (Figure 4, $p < .01$)
➢ Neither perceived language skills nor situational pleasantness showed a reliable correlation with dispreferred-term adoption rates.

Figure 3: Dispreferred term production rates: Pretest vs. Experiment.

Figure 4: Scatterplot showing correlation between perceived personal closeness and dispreferred term adoption rates.

Discussion and Conclusions

➢ Participants adapted to their interlocutor's syntactic structures (Exp 1) and lexical terms (Exp 2), even if these were unconventional. Evidence for real communicative adaptation since participants are less likely to have used these unconventional terms and structures on their own.
Experiment 1:
➢ Morpho-syntactic skills only had an effect on adaptation of syntactic structures if children's age was a factor in the statistical analysis.
➢ Working memory capacity robustly affected syntactic adaptation: Suggests that working memory capacity can limit people's ability to adapt.
Experiment 2:
➢ Marginally more adaptation of lexical terms if the conversational partner was a non-native speaker: Evidence for strategic component of adaptation.
➢ Contrast to previous studies: No effect of perceived language skills on adaptation rates.
➢ BUT positive correlation between perceived personal closeness and adoption rates: Evidence that personal closeness (rather than perceived language skills) affects adaptation.
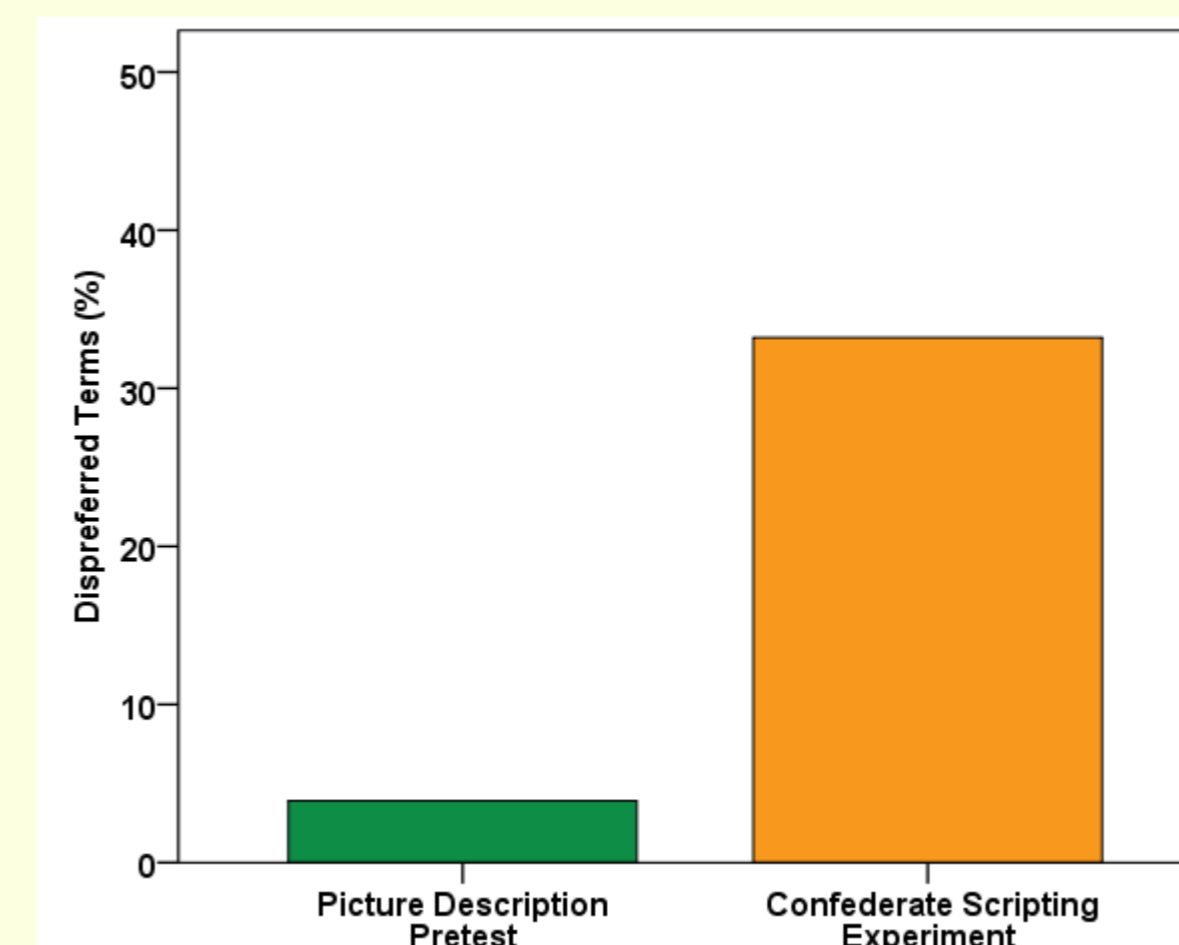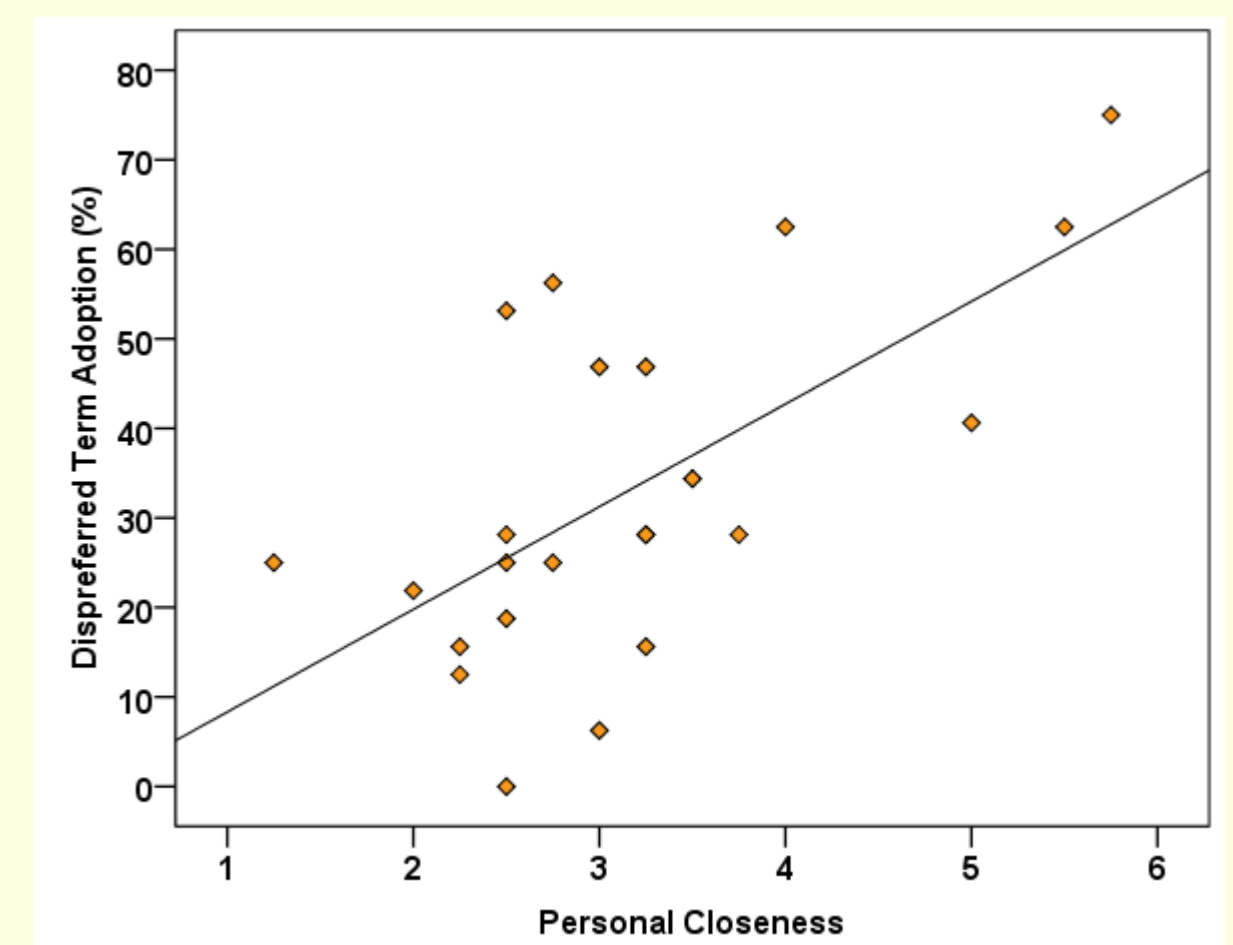
Conclusions
➢ The results of both experiments suggest that social-strategic and cognitive factors influence the amount of adaptation that may contribute to successful communication.
➢ In addition, cognitive and situational factors may influence adaptation behavior more strongly than linguistic factors.

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