What’s the relationship between mastery of sentential complements and false belief performance?

- Linguistic Determinism
  - (Whorf, deVilliers)

- Cognitive Determinism
  - (Fodor, Piaget, Cromer, Tager-Flusberg)

Linguistic Determinism

“Acquiring the language of complementation is prerequisite for being able to reason about false beliefs.”

—deVilliers & deVilliers, 2000

Language as a Toolkit

Neo-Whorfian Idea

- Language does not simply allow us to communicate complex and novel ideas

- Language allows us to represent complex and novel ideas, i.e., language as an enabler for thought

- The critical feature of language for Theory of Mind understanding: Sentential Complements?

Cognitive Determinism

“The usual proposal to account for this relationship is that the understanding of beliefs and states of mind is prerequisite for correctly using the linguistic forms that express those concepts (Cromer, Tager-Flusberg)”

—deVilliers & deVilliers, 2000
Summary of Theory of Mind Findings

deVilliers & Pyers, 2002

- **Mastery of sentential complement structures** is the best predictor of false-belief performance among young children, and this is NOT just a function of higher overall language ability

Summary of Theory of Mind Findings

Gale, deVilliers, deVilliers & Pyers

- **Deaf children** educated exclusively in oral schools, who therefore have delayed language development, pass FB tasks three years late (~ age 7)
- Despite the 3-year delay, **mastery of sentential complements** is still the best predictor of FB performance even after overall language ability has been factored out

Summary of Theory of Mind Findings

Call & Tomasello

- **Great apes (chimps, orangutans) cannot pass False Belief tasks** even when you do everything possible to give them a fair chance

Which proposed relationship is supported by just this evidence?
Summary of Theory of Mind Findings
Hale & Tager-Flusberg

- Training children on (non-mental) sentential complements improves their performance on False Belief tasks while training them on other types of complex syntactic structures (relative clauses) has no effect.

- However: Training on FB itself also improves FB performance, even though it does not involve language training.

Language as a Toolkit
Neo-Whorfian Idea

- Language does not simply allow us to communicate complex and novel ideas.

- Language allows us to represent complex and novel ideas, i.e., language as an enabler for thought.

- A helpful but not critical feature of language for Theory of Mind understanding: Sentential Complements.

OUTSTANDING QUESTIONS

- What’s the link between mastery of sentential complements and performance in FB tasks?

- Are sentential complements the only feature of language that predict performance in FB tasks?

NOW...Which proposed relationship is supported by the evidence?
Outstanding Questions

- **What’s the link** between mastery of sentential complements and performance in FB tasks?

- Are sentential complements the *only* feature of language that predict performance in FB tasks?

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**Name-Name (synonym):**
- Woman/Lady

**Name-Name (category):**
- Rabbit/Animal

**Color-Name:**
- Blue/Cup

**Color-Color:**
- Blue/Yellow

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“Say something different” task
(Doherty, 1994)

- Make sure children know critical words (woman, lady)

- **Production Task:** Puppet gives one word for a picture (lady), child must tell the puppet what the other word is (woman). Later, vice-versa.

- **Judgment Task:** Child gives one word for the picture (lady), puppet gives either the other word (woman), the same word (lady), or something else (man). Child has to say whether puppet followed the instructions
Summary of Theory of Mind Findings

Perner, Stummer, Sprung, Doherty

- Ability to simultaneously consider multiple names for a single object is strongly correlated with performance on False Belief tasks while FB performance is not correlated with the ability to simultaneously consider multiple colors of an object, or to simultaneously consider a color and a name of an object.
Outstanding Questions

- *What’s the link* between mastery of sentential complements and performance in FB tasks?

- Are sentential complements the *only* feature of language that predict performance in FB tasks?

What does the ability to produce **sentential complements** have in common with the ability to do **the name-name task**?

Both require the language user to represent an object or event from multiple perspectives simultaneously.

But don’t kids learn and use synonyms before age 4?

- Perner et al. distinguish between the ability to...

- **Switch perspectives**
  - Take different perspectives at different times

- **Confront perspectives**
  - Represent two perspectives simultaneously

What’s the relationship between **language** and false belief performance?

- Linguistic Determinism
  - (Whorf, deVilliers)

- Cognitive Determinism
  - (Fodor, Piaget, Cromer, Tager-Flusberg)
Cognitive Determinism
(a la Perner and colleagues)

“Our claim is that the ability to confront different perspectives emerges around 4 years and underlies the co-emergence of success on the False Belief and the Name-Name tasks”

—Perner, Stummer, Sprung, & Doherty, 2002

What’s the relationship between mastery of sentential complements and false belief performance?

Or maybe...

Mutual influence

“The overall process is undoubtedly one of mutual facilitation between language and theory of mind, but the critical piece for us is the relationship between mastery of the fundamental syntax of complementation and false belief understanding. The direction of that effect is the focus of our empirical interest.”

—deVilliers & deVilliers, 2000