Work in syntax acquisition assumes that developmental mechanisms are similar in different social contexts. We examined whether social knowledge could influence the learning of a new structure by adding a social manipulation to a syntax acquisition task (Weird Word Order task, Akhtar, 1999). In the first study, we found that 4-year-old children used a novel structure less in the standard WWO paradigm than in a more socially-oriented paradigm. In the second study, we examined input factors over development in our new paradigm and found that social factors contextualize the roles of input in syntactic development.

Social knowledge

- Social knowledge is knowledge that we believe our interlocutor possesses.
- Example: Which language(s) does our interlocutor know or prefer?

Syntax acquisition

- Syntax acquisition paradigms are not socially oriented.
- No interlocutor (e.g., Gomez & Lakusta, 2004)
- Scene description (e.g., Akhtar, 1996)
- Syntax acquisition mechanisms are independent of social factors
- Gradual lexically-based abstraction mechanisms (Abbot-Smith, et al, 2001)

A social syntax acquisition task

- Changed social factors in a syntax acquisition task (Weird Word Order, Akhtar, 1996)
- Standard weird word order (WWO) teaches a novel structure like "Tamming Big Bird the car" for a novel action. Test description of novel action with different arguments. Child can say WWO Big Bird the car.
- Social WWO paradigm - Search for hidden stickers by commanding robot dog with WWO structure to point or look at sticker locations. Child is given
- Increased social factors contextualize the roles of input in syntactic development.

Experiment 1

Between Subjects: Robot vs. Human
20 monolingual Japanese children, age 4:6 (range 4:1 - 4:7)

Task
Demonstrate robot controlled by WWO (e.g., "yubisashite ringo", point apple)
Robot interlocutor: Human interlocutor

Prompt child to command robot
"Tell the robot what to do" Experimenter commands robot
"What happened?"
"Tell the robot what to do with the apple" Child says in WWO
"What happened to the apple?"
"Is point or look better?"
"What did the robot point at?"
Prompt with verb three times.

Coding
"yubisashite X" X "mite X" -> VERB-OBJECT
"X yubisashite" X "mite" -> OBJECT-VERB
"X sagashita" X "mituiketa" -> OBJECT-TRANSVERB

Experiment 2

How do social factors interact with input in syntactic development?
- Previous work has found that WWO use diminishes...
  - Over age (Abbot-Smith, et al., 2001; Akhtar, 1999)
- Frequency of verbs (Matthews, et al., 2006)
- Test input factors in Robot-context WWO task
  - 3 and 4 years
  - Novel (pate, dote) and familiar verbs (yubisashite, mite)
- Factors
  - Input Strength -> gradual abstraction -> less WWO
  - Social Strength -> more WWO
- Predictions of Two Accounts in Robot WWO task (see Figures)
  - Independent Account - Input Strength + Social Strength
  - Contextualize Account - Only use strength factor that is appropriate (Chang, Dell, & Bock, 2006)

Design: Between subjects: Novel/Familiar verbs, 3- and 4-years-old, 40 monolingual Japanese children.

Conclusion

- Learning of a novel syntactic structure differs in different social contexts
- Trajectory over development cannot be explained unless we assume that social knowledge contextualizes the influence of canonical representations.

References