French-English Bilingual Children’s Acquisition of the Past Tense

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Usage-Based Theory and Bilingual Acquisition

- Input structure and frequency key mechanisms underlying acquisition patterns and rates (Tomasello, 2003)
- Simultaneous bilinguals have less exposure to each language than monolinguals
- UB Theory predicts that bilingual children would lag behind monolinguals in achieving acquisition milestones (Tomasello, 2004)
  - Globally or selectively?
Bilingual Acquisition of Morphosyntax

• Conflicting findings on whether bilinguals always lag behind monolinguals (Erdos et al, 2005; Gathercole & Thomas, 2005; Marchman et al, 2004; Nicoladis et al, in press; Paradis & Genesee, 1996; Paradis et al, 2003, 2005/2006)

• Variations in language input at home & school influence bilingual children’s rate of acquisition (Erdos et al, 2005; Gathercole, 2002; 2006)

• Transparency/opacity of target structure influences bilingual children’s rate of acquisition (Gathercole, 2002, 2006; Gathercole & Hoff, in press)

Questions for this Study

• Do French-English bilingual preschoolers lag behind monolinguals in their acquisition of the past tense?

• Is dominance a factor in bilingual-monolingual differences?
  – dominant language = language in which the child has received more input

• Is the transparency/opacity distinction a factor in bilingual-monolingual differences?
  – transparent = regular; opaque = irregular
Defining Transparency/Opacity:

- Bybee’s exemplar-based model of the lexicon - inflectional morphology
- Past tense forms in French and English

Exemplar-Based Model of the Lexicon

- Multi-morphemic words stored fully inflected and inter-connected by
  - phonological form
  - Semantic features
- Token frequency in input and output = increases lexical strength of stem and stem +morpheme constructions

Exemplar-Based Model of the Lexicon

- Type frequency (number of unique stem+morpheme constructions in lexicon) increases schema strength
  - Schema = rules like [verb [-ed]] = past tense reference
  - Type frequency = critical mass for productive and accurate use of inflection
- Irregular forms = inflectional islands
  - Sensitive to token frequency in becoming established
  - Subject to overregularization due to superior strength of regular schema


Past Tense in French and English

- English simple past
  - regular [-ed] and irregular strong verbs
    he walks / he walked; she takes / she took / *she taked
- French passé composé
  - avoir/être + past participle
  - 1st conjugation: “regular” (based on type frequency)
    marcher: Il marche / Il a marché (er = é)
  - 2nd & 3rd conjugation: families of “irregulars”
    prendre: elle prend / elle a pris / *elle a prendu / *elle a prenné
    ouvrir: Il ouvre / il a ouvert / *il a ouvri / *il a ouvré
Exemplar-Based Model and the Past Tense

- Transparent morphology = high type frequency of schema
- Irregular verbs are more opaque than regular verbs - fewer types for each pattern/unique types for some patterns
- Irregulars would be later-acquired than regulars
- Irregulars particularly vulnerable in case of reduced input
- NB: Words & Rules similar predictions for regulars and irregulars

Acquisition of the Past Tense in English and French

- Regular past tense
  - 89% correct at 4;6-4;11 in English (Rice & Wexler, 2001)
  - >90% correct at 4;0-6;0 in French (Jakubowicz & Nash, 2001; Paradis & Crago, 2001)
- Irregular verbs
  - Accuracy with irregulars as a group lags behind regular verbs in both English and French (Rice & Wexler, 2001; Nicoladis et al, in press)
  - Overregularization errors found in both English and French (Marchman & Bates, 1994; Marcus et al, 1992; Nicoladis et al, in press; Nicoladis & Paradis, 2006)
Predictions for This Study

- Difference between bilinguals and monolinguals smaller for bilinguals’ dominant language
- Difference between bilinguals and monolinguals more pronounced for irregular past tense
- No difference in bilinguals and monolinguals in acquisition sequences
  - regulars >> irregulars
  - overregularization errors

Participants

- 25 French-English bilingual children aged 4;0-5;5 (simultaneous and very early sequential)
  - 14 English-dominant; 11 French dominant
- 12 French monolingual children (same age range)
- All children
  - in Edmonton or Montreal, Canada
  - attending French-language daycare, preschool or kindergarten
Procedures

- Parental questionnaire on French and English input
- Peabody Picture Vocabulary Test (PPVT-III: Dunn & Dunn, 1997)
- Échelle de vocabulaire en image Peabody (EVIP: Dunn et al, 1993)
- Past tense probe from the Test of Early Grammatical Impairment (TEGI: Rice & Wexler, 2001)
- Passé composé probe (experimenter-made)

Past Tense Probe: TEGI

“Here, the boy is painting. Now he is done. Tell me what he did”
Passé Composé Probe

“Camille vend du lait aux élèves dans sa classe. Maintenant elle a fini. Dis-moi ce qu’elle a fait.”
Camille is selling milk to the pupils in her class. Now, she’s finished. Tell me what she did.

Language Dominance & Age-Matching

• Dominant language = language for which child has received more input
• Measures for determining dominance
  – simultaneous versus early sequential
  – rating scales of use of that language in the home
  – EVIP and PPVT z scores: (verify categorization)
• No significant difference in ages in months:
  – Bilinguals vs. monolinguals (57 vs. 54, t(35) = 1.683, p = .10)
  – English dominant and French dominant bilinguals (58 vs. 55, t(23) = 1.533, p = .139)
Two-way ANOVA (*bilinguals only*): Significant interaction between dominance and past tense type (Wilk's $\Lambda = .53$, $F(1,21) = 18.33$, $p = .000$). Independent samples t-tests showed English dominant > French dominant for regulars; no difference for irregulars.

Counting overregularized verbs: English dominant vs. French dominant bilinguals ($t(21)= 2.87$, $p = .009$). One-sample t-tests = English dominant bilinguals = monolinguals for reg and overreg, < monolinguals for irreg; French dominant bilinguals < monolinguals
Two-way ANOVA: Significant main effects only, for language groups ($F(2,34) = 4.09, \ p = .026$) and past tense type (Wilk’s $\Lambda = .391$, $F(1,34) = 52.86, \ p = .000$). Post hoc LSD tests showed French dominant > English dominant; no difference for other between-group comparisons.

Counting overregularized verbs: Univariate ANOVA yielded no significant between-group differences ($F(2,34) = 2.24, \ p = .122$)
Summary of Results

• Bilinguals show the same acquisition patterns as monolinguals overall
  – regulars > irregulars in English and in French
  – overregularization errors in English and French
• Bilinguals = monolinguals in their dominant language for regular & overregularized
• Bilingual/monolingual differences apparent for irregular verbs in English even for English dominant

Theoretical Implications

• Bilingual acquisition is vulnerable to these children’s reduced input - but not global delay
  – Interacting factors of transparency/opacity of target structure and dominance important
• Critical mass effects, or bilingual children never lag behind in their dominant language?
• Why no difference between monolinguals and bilinguals in French? Crosslinguistic differences?
  (Nicoladis et al, in press)
  – French = high type/token freq for regulars; high type freq for irregs; English = high type/low token for regs, low type/high token for irregs
  – Bilingual acquisition more resilient in French because of high type freq for both regs and irregs
Applied Implications

- Difference versus Delay: bilingual acquisition differentially affected by dual language input
- School readiness / language assessment:
  - language dominance of child and transparency/opacity of target structure being probed are crucial to keep in mind
  - 39% of all these bilinguals scored below age-expected criterion on the TEGI past tense
  - 13% of English-dominant bilinguals did so
  - 0% of English dominant bilinguals did so for regular verbs

Many thanks to research assistants Aimée Berubé, Heather Golberg, and Carole Bélanger

This research was funded by the Alberta Heritage Foundation for Medical Research and by the Social Sciences and Humanities Research Council of Canada

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