Attraction Errors for Gender in Modern Standard Arabic Reading
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Introduction

1. Much theorizing about agreement dependencies comes from Agreement Attraction Errors.
2. A useful way to look at agreement is to rearrange the table from (Rock & Miller 1991).
3. However, the majority of these studies assume number and gender behave identically.
5. For reasons specific to the grammars of Slovak & Spanish, no one has isolated gender from case in verbal agreement morphology.

Experiment 1 — Design

Subjects:
- 104 native speakers of Arabic (104 females; mean age 20.4 years)
- Subjects < 70% agreement on comprehension Q’s excluded

Stimuli:
- 48-item sets in Modern Standard Arabic (MSA) of the form:
  - NP Subj – Complementizer – RC Verb – NP Attr – Adv
  - Adverb inserted to avoid Attr spillover errors (Wagers, et al., 2009)
  - Systematically manipulated for:
    - Attraction: Masculine, Yes vs. No (Masc)
    - Grammaticality: Grammatical, Ungrammatical (Verb)
    - Critical verbs balanced for tense/aspect (perfect/imperfect)
    - Diacritics only used for lexical disambiguation, short-voiced case markers not written
- All feminines created from masculines by suffixation (ɣ-α)
- All subjects masculine, so NoMasc = NP[ɣαα] & Ungram = V[ɣαα]

Procedure & Analysis:
- Self-paced word-by-word moving window procedure using Linger software (Doug Rothe, MIT).
- Every item followed by a comprehension question (with feedback).
- 1% Winsorization of outliers by region and condition (not by subject)
- Mixed-effects model fitted with experimental variables, orthographic length, and previous region

Predictions:
- Main effect of Gram in verb region and spillover regions (ungrammatical > grammatical)
- Interaction of Gram × MASC in verb and spillover regions (Masc/Ungram > NoMasc/Ungram)
- Perhaps a main effect of MASC in Attr region (NoMasc > Match, Wagers, et al., 2009)

Experiment 1 — Results

Effects of Gender on Attraction Errors in MSA

Experiment 2 — Design

But: a key component of attraction is asymmetry with respect to markedness.
- In MSA, feminine is more marked than masculine (Ryding, 2005)

Our experiment fewer attraction errors/smaller effects with feminine subjects.
- Experiment 2: Add a third manipulation (Subject Gender)

Procedure & Analysis:
- Subject Gender: MASC, FEM
- NP Subj Comp RC Verb Attr Adverb Verb Verb+1 Verb+2 Verb+3
- Grammaticality: Grammatical, Ungrammatical
- Critical verbs balanced for tense/aspect (perfect/imperfect)
- Diacritics only used for lexical disambiguation, short-voiced case markers not written

Predictions:
- Main effect of Grammatical at the critical verb.
- Continued interaction of Grammaticality × Gender.
- Added 3-way interaction of Gram × MASC × Synt/Gram (Fem/NoMatch/Ungram > Masc/NoMatch/Ungram)

Experiment 2 — Results

Discussion & Conclusions

Conclusions:
- Gender error profiles track number profile errors in isolation of case, category, …
- Grammaticality effects appear earlier than attraction effects (Lago, et al., 2015)
- Gender errors are possibly recognized later than number errors
- No evidence for a “gender complexity effect” = plural effect in Wagers, 2009
- Verbal gender attraction is susceptible to the same kinds of errors seen in verbal number

Future Directions:
- What about nouns with inherent/allative-driven gender morphology (i.e., not suffixation)?
- Is the tense-effect in Exp. 2 real? If so, is it about tense or agreement morphology?
- Combined number & gender errors should stack additively
- What about triparticle markessness systems (Badecker, 2007)? Arabic has [ucson] number
- What about the effect of short forms not represented by orthography? Int Mehr?

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http://matthew-tucker.github.io/