

Introduction

- German and English show processing differences between ablauting and affixal inflections with various methodologies [1-5]
- Tucker, Almeida, and Idrissi [6] find reading time differences for sentences with different plural types in Modern Standard Arabic: broken plurals patterned with singulars
- Is the locus of difference in reading times is early (at lexical access) or late (post-lexical)?
- Visual masked priming detects early, automatic, and lexical effects [7]
 - Measure reaction times
 - Unconscious priming effects

Predictions

- Different priming effects for sound and broken types, plural types are stored or accessed differently (i.e. dual route model)
- Identical priming effects, reading time differences must be post-lexical in nature

References

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- [6] Tucker, Idrissi and Almeida. 2015. Representing number in the real-time processing of agreement: self-paced reading evidence from Arabic. *Frontiers in Psychology*.
- [7] Forster, Mohan & Hector. 2003. The mechanics of masked priming. In *Masked Priming: The State of the Art*.
- [8] Boudelaa & Gaskell. 2002. A re-examination of the default system for Arabic Plurals. *Language & Cognitive Processes*.
- [9] Pinker & Prince. 1988. On language and connectionism: analysis of a parallel distributed processing model of language acquisition. In *Pinker & Mehler: Connections and Symbols*.
- [10] Boudelaa & Marslen-Wilson. 2004. Abstract morphemes and lexical representation: The CV-Skeleton in Arabic. *Cognition*.
- [11] Boudelaa & Marslen-Wilson. 2005. Discontinuous morphology in time: Incremental masked priming in Arabic. *Language and Cognitive Processes*.
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- [14] Albright & Hayes. 2003. Rules vs. analogy in English past tenses: a computational/experimental study. *Cognition*.
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Methods

Participants: 72 female participants at UAEU per experiment, late Arabic-English bilinguals

Procedure: Visual masked priming (50ms primes) with lexical decision task (prime font: 24pt regular, target: 30pt bold)

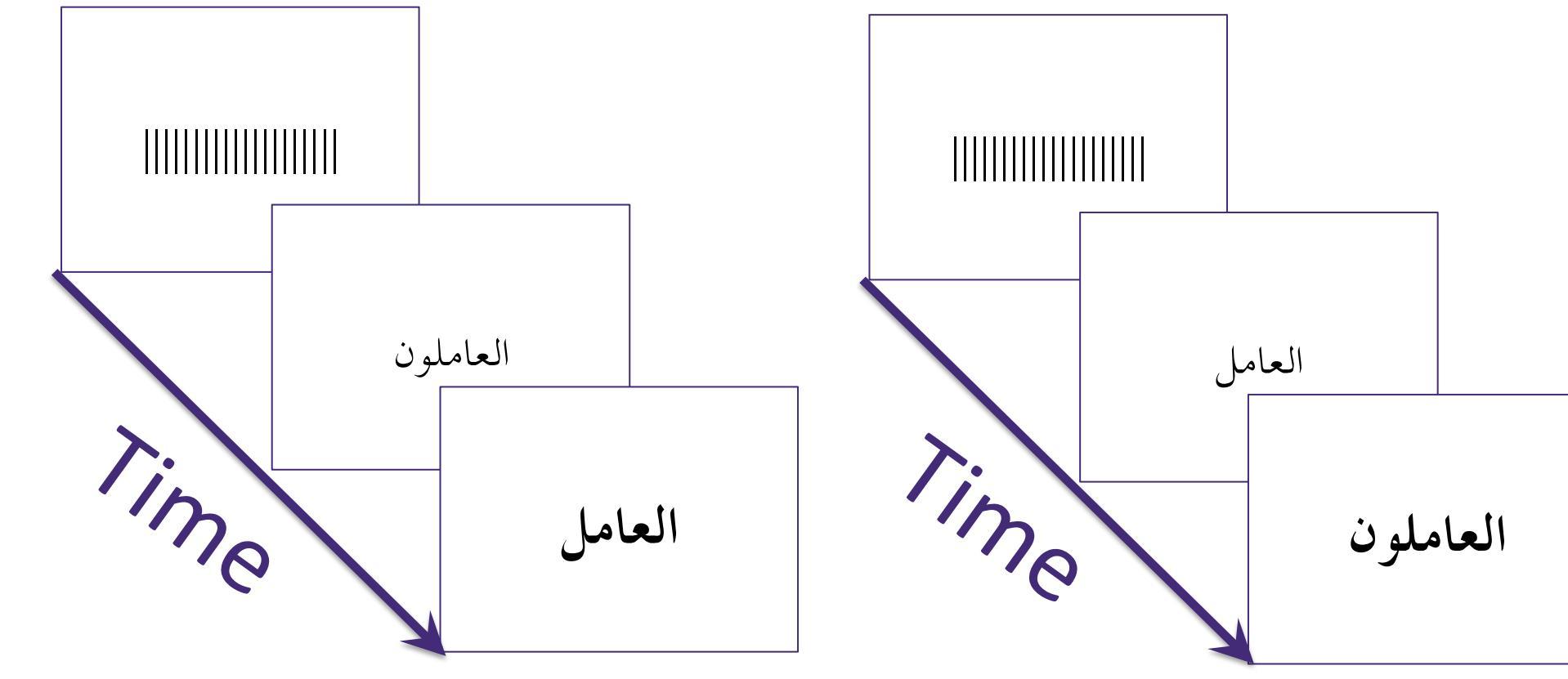
Stimuli: 120 target MSA words (common, unambiguous, definite, unvoveled, frequency matched) and 120 nonwords as filler

Conditions: Experimental Manipulation (Control, Related, Repetition), Plural Gender (Masculine/Human, Feminine/Non-Human), Strength (Sound, Broken)

Target Types: Exp. 1—singulars, Exp. 2—plurals

Analysis: LMER (random slopes, model comparison)

Procedure

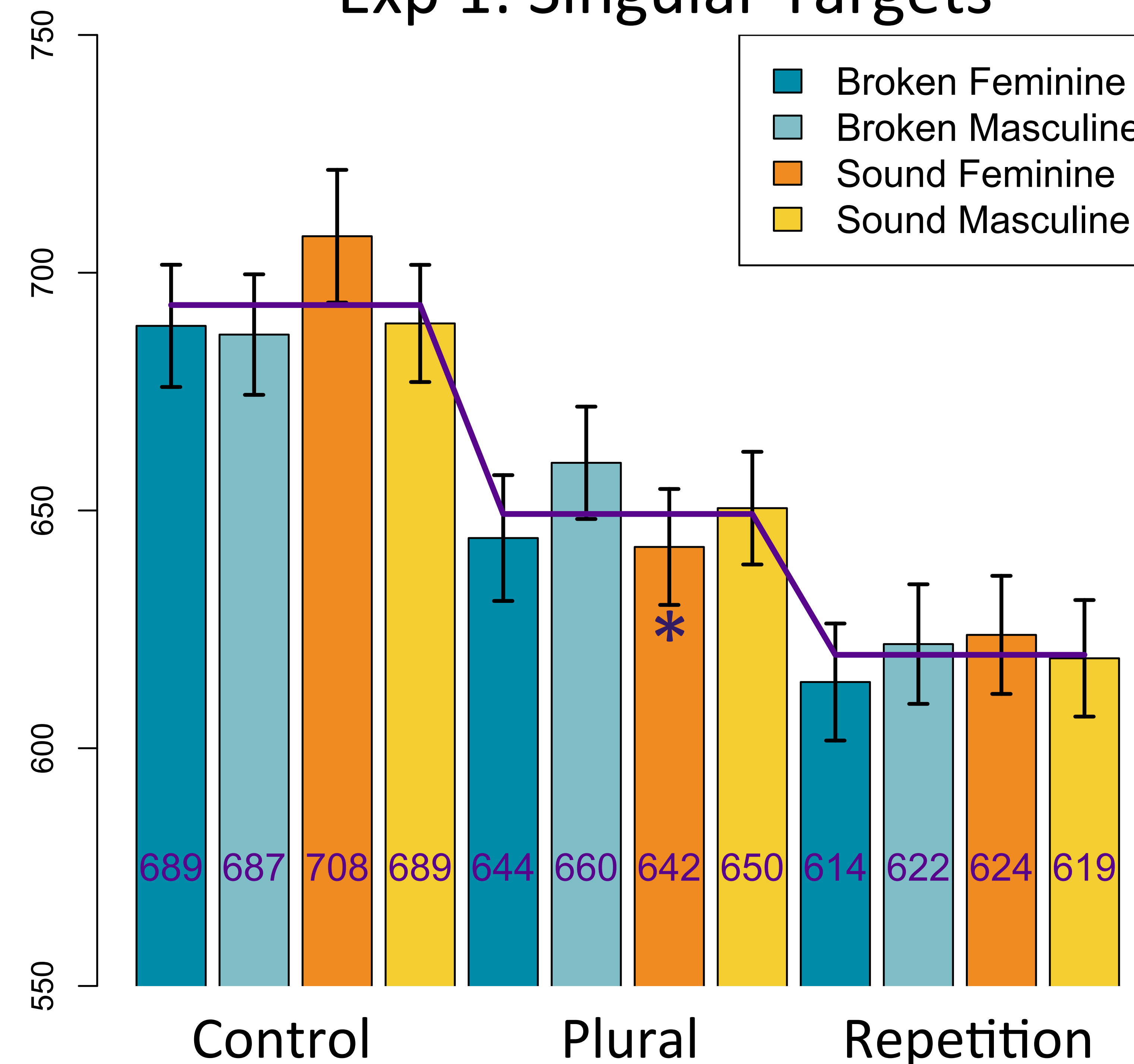


Stimuli

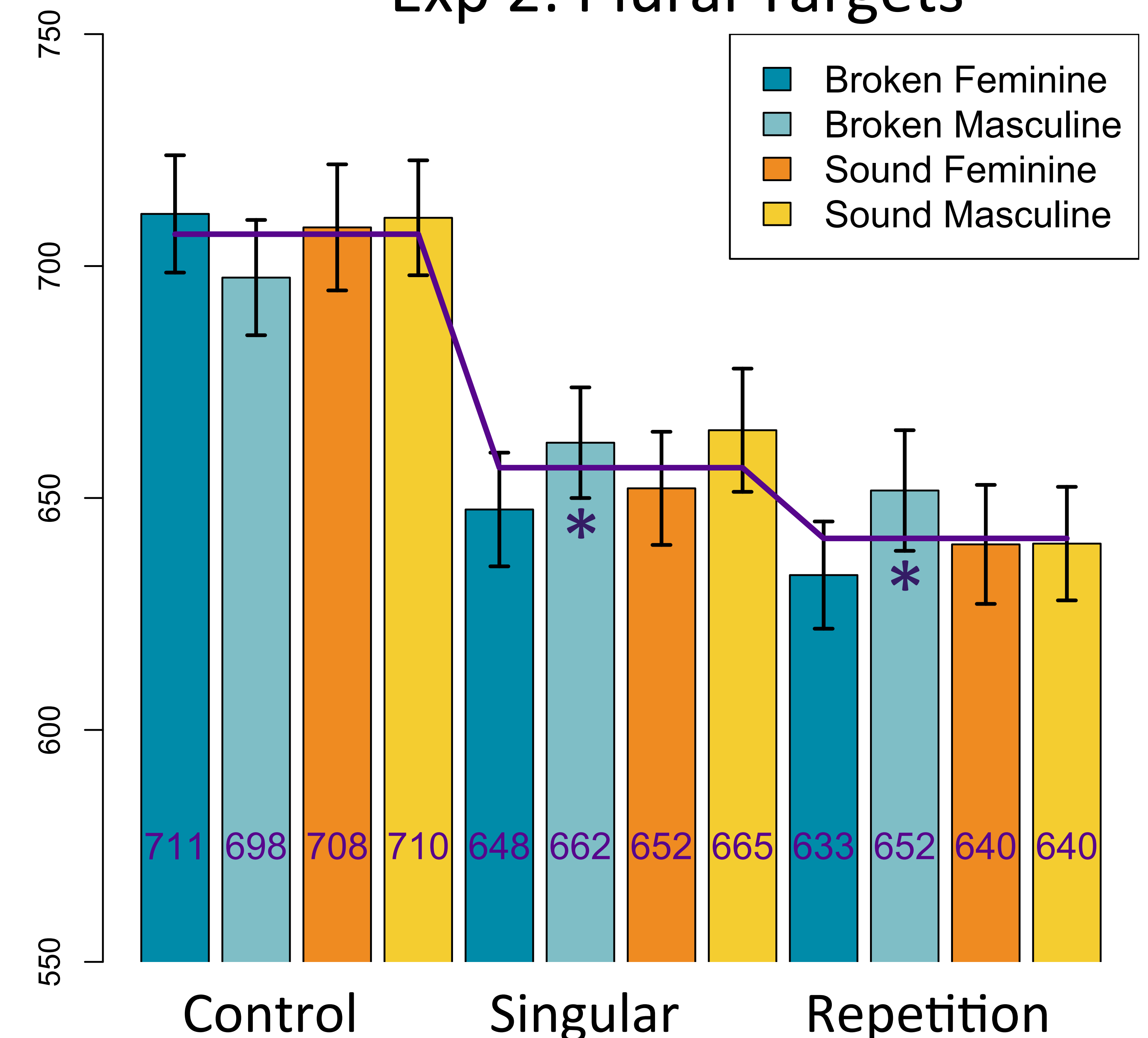
Plural Type	Singular	Plural	Control
Sound Masculine/Human	العامل	العاملون	الثوابت
Sound Feminine/Non-Human	الديانة	الديانات	التحيات
Broken Masculine/Human	اللص	اللصوص	الطوارئ
Broken Feminine/Non-Human	التقليد	التقاليد	الحزم

Results

Exp 1: Singular Targets



Exp 2: Plural Targets



Discussion

- No meaningful difference for plural type or gender during lexical access [8]
- Reading time differences [6] must be post-lexical in nature
- No need to resort to dual-route models [9] for Arabic plurals
- Priming results are in line with robust root priming in MSA [10-13] but not with irregular inflection for German and English
- Results consistent with across-the-board decomposition [5], islands of regularity [14], or connectionist models [15]
- Individual plural patterns remain to be investigated
- Effects of token frequency?
- A plural categorization task may assess ability to access gender and number features