

## (In)sensitivity to surface-level heuristics: A case from Turkish verbal attractors

Utku Türk *University of Maryland, College Park*

**Spoiler.** This study argues that surface-form overlap alone cannot drive agreement attraction. Verbal attractors, bearing the same plural morphology as nominals, can appear as non-agreeing subjects in Turkish but still fail to induce attraction, even when canonical nominal attractors in the same paradigm do. This dissociation supports accounts in which attraction is gated by abstract controllerhood rather than by phonological heuristics, and it constrains how we interpret syncretism-based effects such as Russian genitives [4].

**Background.** Agreement attraction, illusions where a mismatching attractor NP makes ‘*The player on the courts are tired*’ seem acceptable, is robust in production and comprehension across many languages [1,2]. Cue-based retrieval (CBR) accounts assume that input is encoded in content-addressable memory; attraction illusions arise when the verb’s cues sometimes retrieve the attractor instead of the true controller [2,5]. A key open question is whether purely phonological information can itself be used as a retrieval cue. Bock and Eberhard [3] showed that English pseudoplurals like ‘*The player in the course*’ do not induce attraction errors, arguing against a simple form-based heuristic. In contrast, Slioussar [4] reported that Russian genitive singular attractors syncretic with nominative plurals induce more attraction than plural attractors that are not syncretic with nominative plural. Adopting a retrieval-based account, she argued that phonological overlap and ambiguous case endings can act as direct retrieval cues. However, these syncretic genitives can also function as controllers in other constructions, so it remains unclear whether the effect is driven by phonological overlap or by the attractor’s potential to control agreement. Even though these cases do not involve subject–verb agreement, genitive-marked nouns in Russian can serve as agreement controllers in other syntactic environments. It is therefore possible that statistical information about being a possible controller feeds into the retrieval cue set. Indeed, recent work in Turkish, Romanian, and Hindi suggests that being associated with the controller function matters for agreement attraction [7-10]. **The present study** pits phonological modulation against controllerhood in Turkish using two speeded acceptability judgment experiments. Turkish offers pure form overlap without shared controller status. The plural suffix *-Ar* marks plurality on both nominals and nominalized verbs. Crucially, plural-marked verbs can surface as clausal subjects, but they never control finite agreement on a higher verb. **Exp1 (N=95)** compared verbal attractors to canonical nominal attractors [7,10] in a 2x2x2 design crossing Attractor Type (Verbal vs Nominal), Attractor Number (Sg vs Pl), and Grammaticality (Gram vs Ungram), as in (1-2). **Exp2 (N=80)** tested verbal attractors only, to address the possibility that strong nominal attraction in the same session might obscure a weaker verbal effect [11,12]. **Results.** Participants accepted ungrammatical sentences with plural nominal attractors more often than those with singular nominal attractors, replicating robust attraction for genitive possessors [7]. In contrast, no such increase was observed for verbal attractors: ungrammatical sentences with plural versus singular verbal attractors were rejected at similar rates. Bayesian mixed-effects GLMs fitted to ‘Yes Responses’ provided strong evidence for an attraction effect with nominal attractors and no corresponding effect for verbal attractors, and no interaction indicating that plural verbal attractors reduced the ungrammaticality penalty. **Taken together,** these experiments provide a high-powered test of the ‘form hypothesis’ in a system with perfect morpho-phonological overlap between potential attractors and the agreement suffix. The absence of any verbal attraction, alongside robust nominal attraction, suggests that agreement attraction in comprehension is gated by an element’s abstract potential to be an agreement controller. Surface heuristics and statistical cues matter only insofar as they correlate with genuine controllerhood. On this view, syncretism-based effects and related findings are best analyzed as consequences of increased association between certain forms and controller status, rather than evidence that phonology by itself can act as a retrieval cue. These Turkish results therefore sharpen the space of viable

CBR implementations and lend support to accounts that posit higher-level abstractions for agreement processing rather than purely surface-driven mechanisms.

**Linguistic Examples.** Experimental sentences used in our experiment. Nominal conditions (1) were taken from previous experiments on Turkish and verbal attractor conditions (2) were based on those conditions.

**(1) Nominal Attractor Conditions**

- a. Milyoner-in aşçı-sı mutfak-ta sürekli zıpla-dı.  
millionaire-GEN cook[NOM]-POSS kitchen-LOC non.stop jump-PST  
'The millionaire's cook jumped<sub>sg</sub> in the kitchen non-stop.'
- b. \*Milyoner-in aşçı-sı mutfak-ta sürekli zıpla-dı-lar.  
millionaire-GEN cook[NOM]-POSS kitchen-LOC non.stop jump-PST-PL  
'The millionaire's cook jumped<sub>pl</sub> in the kitchen non-stop.'
- c. Milyoner-ler-in aşçı-sı mutfak-ta sürekli zıpla-dı.  
millionaire-PL-GEN cook[NOM]-POSS kitchen-LOC non.stop jump-PST  
'The millionaires' cook jumped<sub>sg</sub> in the kitchen non-stop.'
- d. \*Milyoner-ler-in aşçı-sı mutfak-ta sürekli zıpla-dı-lar.  
millionaire-PL-GEN cook[NOM]-POSS kitchen-LOC non.stop jump-PST-PL  
'The millionaires' cook jumped<sub>pl</sub> in the kitchen non-stop.'

**(2) Verbal Attractor Conditions**

- a. Tut-tuğ-u aşçı mutfak-ta sürekli zıpla-dı.  
hire-NMLZ-POSS cook[NOM] kitchen-LOC non.stop jump-PST  
'The cook they hired<sub>sg</sub> jumped<sub>sg</sub> in the kitchen non-stop.'
- b. \*Tut-tuğ-u aşçı mutfak-ta sürekli zıpla-dı-lar.  
hire-NMLZ-POSS cook[NOM] kitchen-LOC non.stop jump-PST-PL  
'The cook they hired<sub>sg</sub> jumped<sub>pl</sub> in the kitchen non-stop.'
- c. Tut-tuk-lar-ı aşçı mutfak-ta sürekli zıpla-dı.  
hire-NMLZ-PL-POSS cook[NOM] kitchen-LOC non.stop jump-PST  
'The cook they hired<sub>pl</sub> jumped<sub>sg</sub> in the kitchen non-stop.'
- d. \*Tut-tuk-lar-ı aşçı mutfak-ta sürekli zıpla-dı-lar.  
hire-NMLZ-PL-POSS cook[NOM] kitchen-LOC non.stop jump-PST-PL  
'The cook they hired<sub>pl</sub> jumped<sub>pl</sub> in the kitchen non-stop.'

**Figures.** Data preprocessed and visualized using R and the tidyverse packages, and analyzed with the packages brms and cmdstan to fit maximal Bayesian GLMs [13].

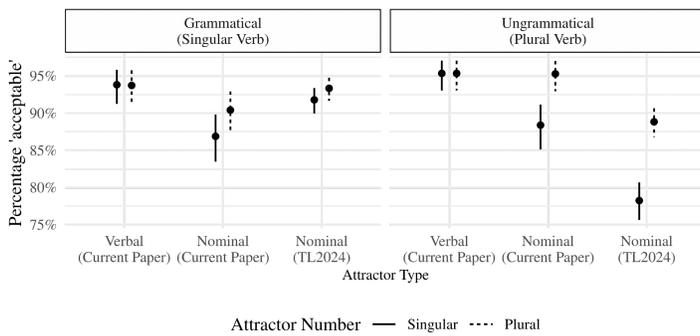


Fig1. Mean Percentage of correct responses and confidence interval by condition for Exp1 and previous results from [7].

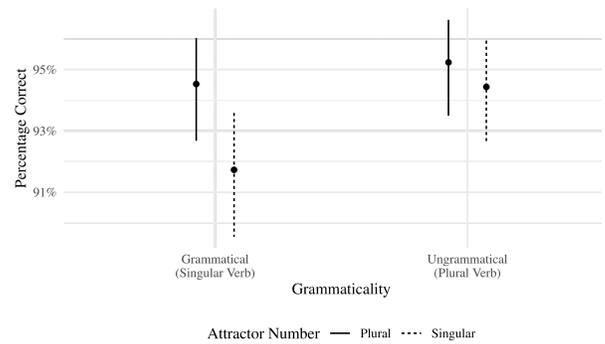


Fig2. Mean Percentage of correct responses and confidence interval by condition for Exp2

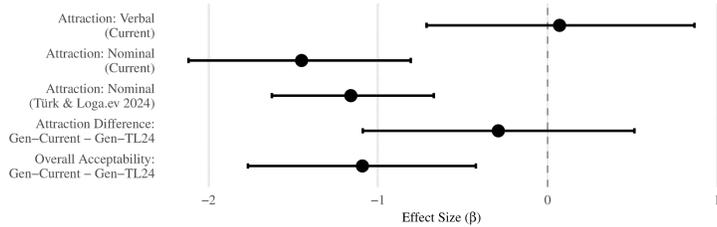


Fig3. Posterior summaries (mean and 95% CI) of model-predicted attraction-related effects as well as overall acceptability for Exp1. Negative values indicate stronger attraction (a reduced ungrammaticality penalty in plural-attractor conditions).

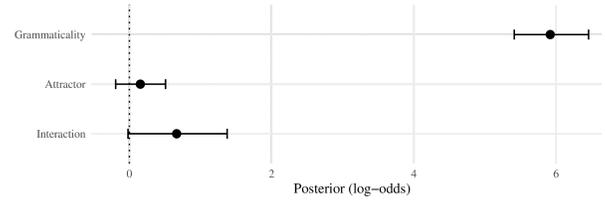


Fig4. Estimates and 95% CIs for the regression coefficients. A positive interaction is due to lowered correct responses with singular attractors in grammatical sentences (unrelated to attraction).

**References:** [1] Bock & Miller, 1991. Cognitive Psychology. [2] Wagers, Lau, & Phillips, 2009. Journal of Memory and Language. [3] Bock & Eberhard, 1993. Language and Cognitive Processes. [4] Slioussar, 2018. Journal of Memory and Language. [5] Lewis & Vasishth, 2005. Cognitive Science. [6] Avetisyan, Lago, & Vasishth, 2020. Journal of Memory and Language. [7] Türk & Logačov, 2024. Language, Cognition and Neuroscience. [8] Bhatia & Dillon, 2022. Journal of Memory and Language. [9] Bleotu & Dillon, 2024. Journal of Memory and Language. [10] Lago et al., 2019. Linguistic Approaches to Bilingualism. [11] Arehalli & Wittenberg, 2021. Linguistics Vanguard. [12] Hammerly, Staub, & Dillon, 2019. Cognitive Psychology. [13] Gelman & Hill, 2007