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Alternative agreement in Danish—mismatch without intervention

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This study investigates “alternative agreement” in Danish, where predicative adjectives sometimes agree with the object of a preposition (P-Obj) rather than the subject. Unlike English “mismatch agreement” Danish alternative agreement occurs without linear intervention between the competing elements. Three experiments examine this phenomenon: two sentence-completion tasks (with fronted vs. *in-situ* P-Obj) and an acceptability judgment task. Results show that alternative agreement occurs significantly more frequently with singular P-Obj than plural P-Obj, and more frequently with fronted P-Obj than *in-situ* P-Obj. Standard agreement is consistently rated more acceptable than alternative agreement, though fronting increases the acceptability of alternative agreement. We argue that Danish alternative agreement results from two independent factors: (1) the phonological tendency to drop inflectional endings (apocope), affecting singular and plural P-Obj differently, and (2) the cognitive preference to interpret sentence—initial nominal elements as subjects, creating processing bias favoring agreement with fronted P-Obj. Rather than reflecting a new agreement system or language change, Danish alternative agreement appears to be a systematic performance error.

KEYWORDS

fronting, apocope, performance error, acceptability, grammaticality

Introduction

We present the results from three studies on mismatch agreement in Danish not previously published internationally in English (Christensen and Nyvad, 2019, 2021; Nyvad and Christensen, 2023). In the Danish literature, mismatch agreement is referred to as “alternative agreement” (Engberg-Pedersen and Poulsen, 2010). Danish verbal morphology is very weak, and because verbs only inflect for tense, the verb does not agree with the subject in person or number, which makes it impossible to make a direct comparison with mismatch agreement studies on, for example, English. However, in Danish, a predicative adjective agrees with the subject in number, when in the singular, and in gender (C = common gender, N = neuter):

- (1) a. Katt-en / den er vild-Ø / *vild-t / *vild-e.
Cat-the / it is wild-C.SING / *wild-N.SING / *wild-PLUR
“The cat / it is wild.”
b. Dyr-et / det er *vild-Ø / vild-t / *vild-e.
Animal-the / it is *wild-C.SING / wild-N.SING / *wild-PLUR
“The animal is wild.”
(2) a. Katt-e-ne / de er *vild-Ø / *vild-t / vild-e.
Cat-PLUR-the / they are *wild-C.SING / *wild-N.SING / wild-PLUR
“The cats / they are wild.”
b. Dyr-e-ne / de er *vild-Ø / *vild-t / vild-e.
Animal-PLUR-the / they are *wild-C.SING / *wild-N.SING / wild-PLUR
“The animals / they are wild.”

Interestingly, in informal variants of spoken and (unedited) written Danish, sometimes a predicative adjective appears to agree with the nominal complement of the preposition selected by the adjective (henceforth, the prepositional object, P-Obj) and not with the subject, even when the P-Obj is overtly accusative (i.e., a pronoun), as shown in the following examples from the web:

- (3) Patrich og Simon er jeg vild-e med, dem har vi også snakket om, ...
Patrick and Simon am I wild-PLUR with, them have we also talked about
 “Patric and Simon, I am crazy about. We’ve also talked about them.” [baby.dk/debat]
- (4) Tusinde tak for alle jeres skønne hilsner på min fødselsdag, dem er jeg virkelig glad-e for.
Thousands thanks for all your lovely greetings on my birthday, them am I really happy-PLUR for
 “A thousand thanks for all your lovely greetings on my birthday. They really made me happy.” [Instagram]
- (5) Jeg undskylder for meget tørre neglebånd –
I really apologize for my dry cuticles
 jeg har ikke været god-e ved dem det sidste stykke tid;
I have not been good-PLUR with them the last piece time
 “I apologize for my dry cuticles. I haven’t been good to them lately.” [appeal4.dk/blogs]
- (6) De er Så søde, uanset om det er hund, kat eller hest!
They are so sweet, regardless if it is dog, cat or horse!
 Jeg er trygg-e ved dem
I am comfortable-PLUR with them
 “They’re SO sweet, no matter if it’s a dog, a cat, or a horse! I’m comfortable with them.” [hestegalleri.dk/forum]

A striking fact about Danish alternative agreement is that the “competing” element does not “intervene.” A number of studies have shown that when a nominal element intervenes between the head noun in the subject and the verb in English or French, it may lead to subject–verb agreement errors, so-called mismatch agreement, if the two (or more) nouns differ in grammatical number (Bock and Miller, 1991; Vigliocco and Nicol, 1998; Franck et al., 2002; Villata et al., 2016). For example, in (7), based on Franck et al. (2002), the task is to complete the sentence by inserting a verb inflected for number (and tense):

- (7) The key to the cabinets ____ missing. (Answer: *is / are*)

Central to this phenomenon is that the “distractor” [*cabinets* in (7)] intervenes linearly between the target noun (*key*) and the verb, leading to competition between the distractor and the target (this “intervention” is strictly linear, not hierarchical). In experiments, this “competition” elicits mismatch agreement in approximately 20% of cases. Note that the distractor is part of the subject noun phrase (NP), and because English has subject–verb agreement, the verb should agree with the head noun. Mismatch agreement is considered a performance error, and although random errors do occur, mismatch agreement, like many other types of performance errors, is not necessarily random but systematic (Garrett, 2015). It should be noted that, on one hand, not every agreement

mismatch is agreement attraction (e.g., Keung and Staub, 2018), and, on the other hand, agreement attraction was perceived as a colloquial (dialectal) variation before it was thoroughly tested (Kimball and Aissen, 1971) and can arise without linear intervention (Bock and Miller, 1991; Wagers et al., 2009; Staub, 2010; Lago et al., 2015; Laurinavichyute and von der Malsburg, 2024; among others).

Unlike the English type, as shown in (7), in Danish alternative agreement, the two competing elements are distinct constituents, a subject and a P-Obj, and the subject is always closer to the predicative adjective than its competitor, the P-Obj. When the P-Obj is *in situ*, as in (8) [and (3) and (4)], the subject immediately precedes the adjective, and both precede the P-Obj. When the P-Obj is fronted, as in (9) [and (5) and (6)], the subject still immediately precedes the adjective. The competing P-Obj never intervenes, and hence, Danish alternative agreement does not appear to be an intervention effect. In analogy with English mismatch agreement, we would thus expect only standard agreement (except for random mistakes).

- (8) a. Jeg er vild-e med dem. (P-Obj *in situ*)
I am crazy-PLUR with them
 “I am crazy about them”
 b. Vi er vild-Ø med den.
We are crazy-PLUR with it
 “I am crazy about them”
- (9) a. Dem er jeg vild-e med. (P-Obj fronted)
Them am I crazy-PLUR with
 “Those (ones), I am crazy about”
 b. Den er vi vild-Ø med.
It are we crazy-PLUR with
 “That (one), I am crazy about”

Another striking fact about the Danish examples is that alternative agreement targets an element (P-Obj) inside a preposition phrase. Baker (2008) outlines several cross-linguistic criteria for syntactic agreement. Based on these criteria, an argument inside a prepositional phrase should not be able to control agreement because such arguments are assigned case by a preposition. The preposition is necessary because adjectives are not able to assign case on their own (Baker, 2008, p. 73). As a result, we would not expect the adjective to agree with P-Obj. However, this kind of agreement does occur in actual language use in Danish, as illustrated earlier in (3)–(6). Moreover, constructions in which the predicative adjective agrees with neither the subject nor the P-Obj are exceedingly rare (Engberg-Pedersen and Poulsen, 2010; see also Kandel et al., 2022).

The basic question, then, is what controls this alternative agreement. One option is that it has to do with apocope and the alleged tendency to “swallow” or drop the endings in Danish (DFF, 2017; The Listen and Learn Blog, 2020; Thorsen, 2021, see also Schachtenhaufen, 2023). Dropping the plural *-e* leads to alternative agreement in examples such as (8b) and (9b). However, apocope primarily affects non-syllabic (weak) endings (such as neuter *-t*). Plural *-e* tends to be syllabic (heavy) and, hence, should be more resilient to erosion. Indeed, the *-e* ending is sometimes added, as in (3)–(6).

A second option is that the grammar as such is undergoing a change, possibly away from subject agreement and toward topic agreement: When a (non-subject) topic is fronted, it triggers alternative agreement, but alternative agreement may also be triggered when the topic is *in situ* (One obvious problem here is that this is circular: alternative agreement would signal topicality, and topicality triggers alternative agreement).

Finally, alternative agreement may in fact not be “alternative” but rather the result of a performance error, occasionally triggered by a number of independent factors under the right circumstances. We shall argue that the latter option is most likely the case.

A corpus study by Engberg-Pedersen and Poulsen (2010) investigated clear cases of agreement (i.e., where the P-Obj has a different number than the subject) and found that the average occurrence rate of alternative agreement was 2.4% for singular P-Obj and 5.5% for plural P-Obj. Although uninflected adjectival forms are generally far more frequent, the data showed that in alternative agreement, the inflected form of the predicative adjective appeared more often. This suggests that frequency alone cannot account for the occurrence of this phenomenon. In a reading time experiment, they found that sentences lacking agreement altogether, as in (10d), were read more slowly than sentences in which the predicative adjective agreed with the P-Obj, as in (10c). Perhaps most strikingly, there was no significant difference in reading times between alternative agreement, (10c), and standard subject agreement, (10b). The following examples are from (Engberg-Pedersen and Poulsen, 2010, p. 223):

- (10) a. Full agreement:
Den bog var hun helt vild med for et år siden
That book was she completely crazy-SING about for a year ago
“She was completely crazy about that book a year ago”
- b. Subject agreement:
De bøger var hun helt vild med for et år siden
Those books was she completely crazy-SING about for a year ago
“She was completely crazy about those books a year ago”
- c. Agreement with P-Obj:
De bøger var hun helt vilde med for et år siden
Those books was she completely crazy-PLUR about for a year ago
“She was completely crazy about those books a year ago”
- d. No agreement:
Den bog var hun helt vilde med for et år siden
That book was she completely crazy-PLUR about for a year ago
“She was completely crazy about that book a year ago”

Based on the findings discussed above, we predicted that plural P-Obj would trigger alternative agreement more readily than singular P-Obj. Plural NPs have been found to be “strong attractors” and elicit more errors than singular NPs (Bock and Miller, 1991; Gillespie and Pearlmutter, 2013). Plural NPs are more marked than singular ones: children acquire plural forms

later; people make more spontaneous errors with plural elements; plural nouns are often remembered as singular but not vice versa; working memory limitations affect plural elements more severely; and plural is more marked both semantically (meaning “more than one”) and morphologically (requiring inflectional endings; Franck et al., 2002, p. 394–397). Jensen (2004) even suggested that alternative agreement only occurs with plural P-Obj, and Engberg-Pedersen and Poulsen (2010) found more cases of alternative agreement with plural than singular P-Obj in their corpus study.

We did two sentence-completion studies, one with fronting and one without fronting (Christensen and Nyvad, 2019, 2021), and an acceptability study to investigate the relationship between production and acceptability (Nyvad and Christensen, 2023). In the following, we bring these studies together in a synthesis, subjecting the data to a new analysis and, consequently, a new interpretation.

Sentence completion

Materials and methods

The studies involved a sentence-completion task using Google Forms. Participants were presented with sentences such as (11) and (12), where the expected predicative adjective is provided in the short preceding sentence. Participants were instructed to fill in the blanks by reusing the predicative adjective in the preceding sentence [e.g. a form of *vild* as in (11) and (12)]. The items in the two studies were almost identical, except for fronting and in the fronting condition, the sentences began with “And these here, ... / And this here,...” as shown in (11) and (12):

- (11) Jeg er helt vild med kager. Og dem her, dem er jeg specielt _____ med.
I am totally crazy about cakes. And these here, those am I particularly _____ about.
- (12) Vi er helt vild-e med kager, især den her. Vi er specielt _____ med den her.
We are totally crazy-PLUR about cakes. We are particularly _____ about this here.

Note that the context shows standard agreement, biasing against alternative agreement, and crucially, that the grammatical number of the P-Obj and the grammatical number of the subject were always different, which ensured competition between the two.

The stimulus consisted of 28 target sentences (14 different predicative adjectives), presented in random order, half of which had a plural P-Obj and a singular subject, while the other half had a singular P-Obj and a plural subject. The stimulus set also included 42 fillers. The sentences were distributed across two lists such that each participant only saw one version of each sentence, that is, with either a plural P-Obj (and singular subject) or a singular P-Obj (and plural subject). The predicative adjectives involved were:

- (13) *enig* (agreeing), *glad* (happy), *god* (good), *ligeglad* (indifferent), *stolt* (proud), *sur* (angry), *tilfreds* (satisfied),

træt (tired), *tryk* (comfortable), *vild* (crazy), *sikker* (sure), *ked* (sad), and *flov* (embarrassed).

In the first study, involving 100 participants (82 females, 16 males; age 21–75 years, mean 35.6), all the sentences had a fronted P-Obj, as in (11). In the second study, involving 74 participants (54 females, 20 males; age 24–75 years, mean 45.2), all the sentences had a P-Obj *in situ*, as in (12).

Results

The results were analyzed in R (v.4.1.2; R Core Team, 2021) and plotted using the *tidyverse* package (Wickham et al., 2019). We used mixed effects models with logistic regression (*glmer*), using the *lme4* package (Bates et al., 2012), one model for each study. The models had alternative agreement as outcome and number (P-Obj = singular vs. P-Obj = plural), frequency of the predicative adjective ($\log_{10}$ transformed), and trial as predictors; random intercepts for participant and item (sentence); and random

slopes for number by participant and by sentence. Both models converged with warnings.

The results are shown in Table 1 and Figure 1. In both studies, the effect of number was highly significant ($p \leq 0.001$); the effect of $\log_{10}$ frequency of the predicative adjective was also significant ($p \leq 0.05$): the more common the adjective, the more alternative agreement. Language change typically starts in infrequent forms; according to Hejná and Walkden (2022, p. 141), “words that are used more often—lexical items which have a high token frequency—are more resistant to regularization over time.” So, we would expect a significant, negative frequency effect if alternative agreement were indeed a change in the language system.

There was no significant effect of trial.

To see if the two models were different, we applied a standard linear model (*lm*) with alternative agreement as outcome and the interaction between position [*in situ* (Study 1) vs. fronted (Study 2)] and number as predictor. There were no random factors as neither participants nor items were the same in the two studies. The result showed that the interaction was significant ($p < 0.001$).

Acceptability study

What people say or write (the types of constructions people use) is not necessarily the same as what they find acceptable (Christensen and Nyvad, 2024). Neither Engberg-Pedersen and Poulsen’s (2010) study nor the two studies analyzed earlier tell us whether Danish speakers find alternative agreement acceptable. However, given that standard agreement is elicited more frequently than alternative agreement, we hypothesized that standard agreement would also be more acceptable. Furthermore, we hypothesized that fronting would also increase acceptability of alternative agreement, as fronting increased elicitation of alternative agreement.

Materials and methods

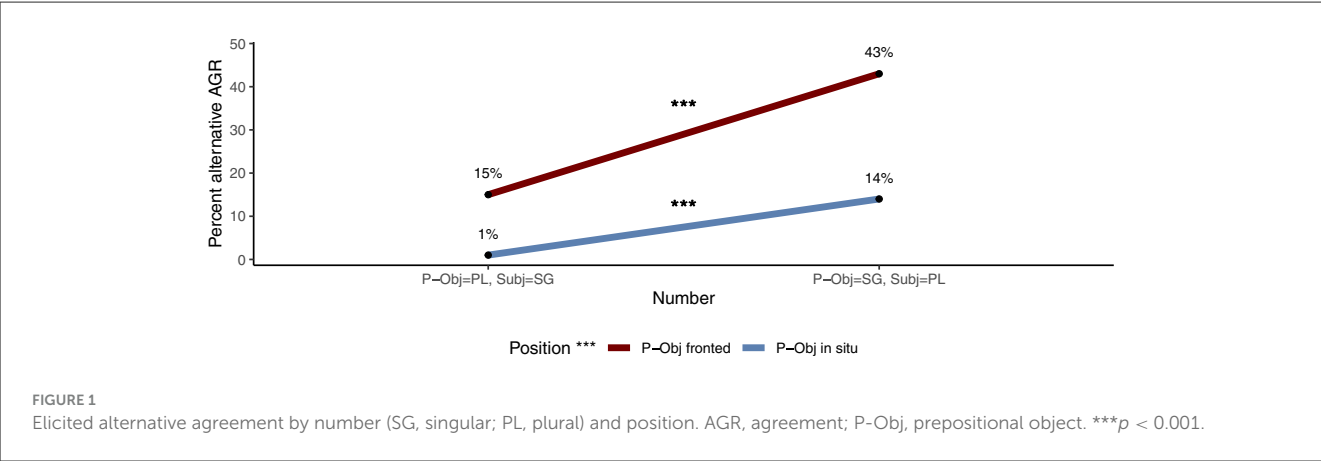
We constructed an acceptability test on Google Forms using a set of stimulus sentences modeled on actual examples with context found on Google, as in (3)–(6). We used 12 different

TABLE 1 The results of the mixed-effects logistic regression models of alternative agreement as a function of number (sg = singular), lexical frequency, and trial.

1. P-OBJ IN SITU	Estimate	SE	z	p
(Intercept)	−9.366	1.822	−5.141	0.000***
Number (P-Obj = sg)	2.560	0.767	3.336	0.001***
Frequency ($\log_{10}$)	1.414	0.592	2.388	0.017*
Trial	−0.016	0.026	−0.601	0.548
2. P-OBJ FRONTED	Estimate	SE	z	p
(Intercept)	−5.752	1.156	−4.975	0.000***
Number (P-Obj = sg)	3.517	0.688	5.114	0.000***
Frequency ($\log_{10}$)	0.764	0.389	1.963	0.050*
Trial	−0.001	0.019	−0.051	0.960

*** $p < 0.001$.

* $p < 0.05$.



predicative adjectives, the same as in (13), except that we used *vred på* (angry with) instead of *sikker/sikre på* (sure about), *ked(e) af* (sad about), *flove* (over). Each sentence was preceded by a short context, and each adjective occurred with and without fronting, with and without alternative agreement and with a singular P-Obj (and plural subject) and with a plural P-Obj (and singular subject). This resulted in 96 target sentences, as in (14)–(15) (plus 17 fillers, not discussed here, consisting of 14 sentences with similar structures but with a different adjectival agreement paradigm, *-t* vs. *de*, and 14 unrelated sentences where half had a tense omission error). The stimuli were distributed across 8 lists, with 12 targets and 13 fillers (Latin square), presented in random order. Participants were instructed to evaluate each sentence on a 7-point Likert scale (1 = *completely unacceptable*, 7 = *completely acceptable*), and to use their own intuition rather than what they thought might be “correct” or “standard.”

- (14)

Disse tasker er fundet i en genbrugsbutik i Berlin.
These bags are found in a second-hand-shop in Berlin.

a.

Jeg er **vild-Ø/e** med **dem**, (P-Obj = PLUR, *in situ*)
I am wild with them,

b.

Dem er jeg **vild-Ø/e** med, (P-Obj = PLUR, fronted)
Them am I wild with,

fordi der er så mange farver, og pailletterne er for skønne.
because there are so many colors, and sequins-the are too beautiful.
“These bags were found in a thrift shop in Berlin. I love them because there are so many colors and the sequins are so pretty.”

(15)

Denne taske er fundet i en genbrugsbutik i Berlin.
This bag is found in a second-hand-shop in Berlin.

a.

Vi er **vild-Ø/e** med **den**, (P-Obj = SING, *in situ*)
We are wild with it,

b.

Den er jeg **vild-Ø/e** med, (P-Obj = SING, fronted)
It are we wild with,

fordi der er så mange farver, og pailletterne er for skønne.
because there are so many colors, and sequins-the are too beautiful.
“This bag was found in a thrift shop in Berlin. I love it because there are so many colors and the sequins are so pretty.”

The study involved 197 participants (196 female, 1 male; age 18–72, mean = 32).¹ We used a cumulative link mixed-effects model (*clmm*) with the *ordinal* package for R (Christensen, 2015). The model had acceptability as outcome variable and the three-way interaction between agreement, fronting, and number as predictor and random intercepts for participants and items, and random slopes by participant for the three-way interaction. The results are shown in Table 2, and the

1 There is a massive gender bias, but we do not have any reason to expect any difference in their acceptability ratings one way or the other. The participants were recruited on Instagram in a knitting forum. We have no reasons to assume that people who knit use more or less alternative agreement either.

TABLE 2 The results of the cumulative mixed-effects model of acceptability as a function of agreement, fronting, and number.

Effect	Estimate	SE	z	p
Agreement (standard)	3.359	0.359	9.357	0.000***
Fronting	0.779	0.313	2.490	0.013*
Number (P-Obj = SG)	−0.102	0.317	−0.324	0.746
Agreement × fronting	−0.915	0.453	−2.019	0.044*
Agreement × number	0.095	0.458	0.208	0.835
Fronting × number	0.259	0.441	0.587	0.557
Agreement × fronting * number	−0.891	0.635	−1.403	0.161

The first three lines show the main effects of Agreement, Fronting and Number, respectively.
*** *p* < 0.001.
* *p* < 0.05.

interaction between agreement and fronting is illustrated in Figure 2A. Figure 2B shows the distribution of acceptability ratings by agreement. The distribution for alternative agreement *in situ* is skewed to the left; the one for fronted is more or less flat.

Discussion

In Nyvad (2007), it is hypothesized that adjectives in alternative agreement constructions might agree with a pragmatic element (topic) rather than the syntactic subject. Typological data from Comrie (2003, p. 319ff) supports this, showing that “trigger-happy” agreement (where multiple grammatical elements can control agreement) depends on an NP’s “topicworthiness”—how likely it functions as a topic—which relates to NP definiteness and pragmatic prominence or “salience” (Comrie, 2003, p. 329). The following hierarchy shows decreasing topicworthiness:

(16) (I love) *it* > *this book* > *the book* > *a book*

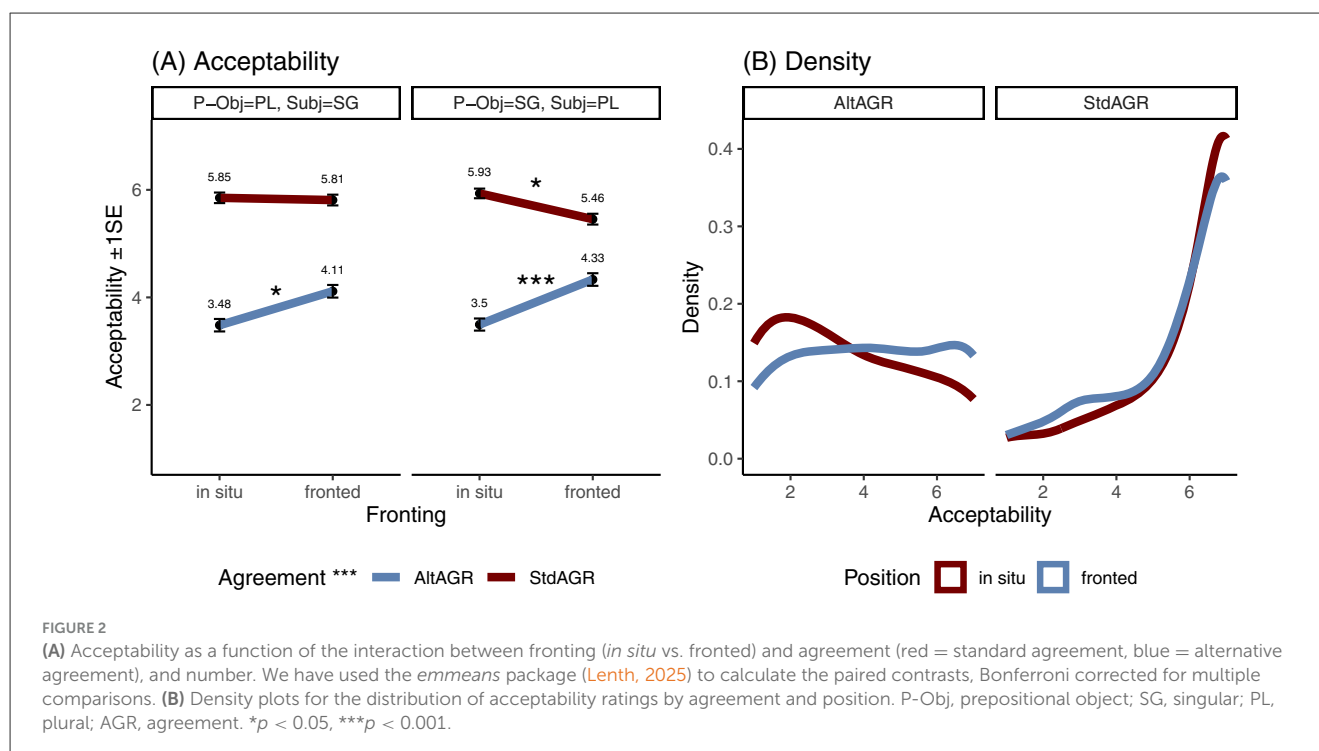
Because fronted elements tend to serve as topics or focus elements with discourse prominence, it could be argued that alternative agreement would be easier to elicit in sentences with fronting, which is also the pattern that we attested in the first study. However, the pattern in Figure 1 can be explained with reference to two independently motivated factors that do not require the stipulation of a new kind of agreement system, namely, apocope (sometimes dropping the *-e* ending, resulting in bare forms) and the preference for having the subject first (sometimes leading to a misparse and reanalysis), as we discuss next.

Some instances of apparent alternative agreement may be due to the phonological loss of inflectional endings on adjectives in Danish, such as apocope (see the Introduction). When the P-Obj is singular (and the subject is plural), dropping the *-e* increases the amount of alternative agreement (because *-Ø* is singular agreement); conversely, when the P-Obj is plural (and the subject is singular), the tendency to drop the *-e* only enforces the standard subject agreement (i.e., the bare form).

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This explains why both lines in Figure 1 have an upward slope, with more cases of elicited alternative agreement with a singular P-Obj.

The second factor is related to the fact that the subject appears in the sentence-initial position more frequently than any other syntactic function in Danish: Subject–verb–object order occurs almost 10 times as frequently as object–verb–subject order (Christensen and Nyvad, 2024), and overall, the subject is the initial constituent approximately 70% of the time (Nyvad et al., 2025; see also Mikkelsen, 2015; Puggaard, 2019). The fact that Danish is overwhelmingly a subject-initial language may lead us to interpret the first nominal constituent as the subject. When processing a sentence in which the syntactic role of the first NP is ambiguous, it is initially interpreted as the subject (Friederici et al., 2001; Krebs et al., 2018). Therefore, in constructions where P-Obj is fronted, the sentence may be reanalyzed upon encountering the actual subject right after the finite verb. However, this initial misinterpretation is likely not fully discarded (Christianson et al., 2001; Ferreira et al., 2001), which could bias processing in favor of agreement with the predicative adjective. Furthermore, in Danish, where the subject normally has nominative case, sometimes the subject may be accusative instead of nominative, at least in colloquial speech and informal writing, for example, coordinate subjects and post-modified pronominal subjects (Schack, 2013; Jensen, 2019). This means that even in cases in which P-Obj is morphologically marked as accusative, it could still initially be analyzed as a subject; compare our stimulus sentences in examples (14b). In (15b), the singular P-Obj *den* “it” is ambiguous due to syncretism between nominative and accusative, hence, easily compatible with being the subject. In short, there is more alternative agreement with a fronted P-Obj than with an *in-situ* P-Obj simply because the

first NP tends to be the subject, and because Danish has subject–predicate agreement. This asymmetry is significantly affected by number, because apocope increases alternative agreement when the fronted P-Obj is singular but decreases it when the P-Obj is plural.

Standard agreement is significantly more acceptable than alternative agreement (significant main effect of agreement, see Table 2), but alternative agreement is significantly more acceptable if the P-Obj is fronted than if it is *in situ*, as shown in Figure 2A; compare the significant agreement $\times$ fronting interaction effect in Table 2. There was, however, no effect of number. As shown in Figure 2B, the distribution of acceptability ratings for alternative agreement *in situ* is skewed to the left, suggesting that it is generally considered unacceptable. The distribution when the P-Obj is fronted (blue line) is more or less flat, suggesting that across participants, the overall acceptability was less clear. This indeterminacy, following ideas by Foppolo and Staub (2020), might be taken as an indication of a “grammatical lacuna,” a gap in the grammar where a clear rule is not specified. However, we argue that our results can be explained by the independently motivated factors mentioned above: apocope and misparsing with fronting. This seems more parsimonious than suggesting specific rules for each of the individual levels of the interaction between fronting and agreement and then suggesting that the one for alternative agreement with a fronted P-Obj (the blue line in Figure 2B) is unspecified. The flat distribution is also compatible with our explanation.

One might speculate that alternative agreement is due to phonetic factors, because the two forms might be close to identical in pronunciation. However, *vild* and *vilde*, for example, are in fact phonetically distinct: *Vild* has “stød” (it basically ends with

a glottal stop), whereas the final schwa in *vilde* is assimilated with the preceding vowel or sonorant without syllable loss (Hansen, 1990; Brink et al., 1991; Grønnum, 2005). Engberg-Pedersen and Poulsen (2010) suggest that alternative agreement may have started as spontaneous phonetic assimilation which, over time, has been integrated into the language system. However, because alternative agreement does not occur without a competing complement nominal, (1)–(2), and is not found with attributive adjectives, this indicates that phonetic factors alone cannot explain the phenomenon.

Agreement with predicative adjectives occurs across Romance and Scandinavian languages, regardless of inflectional richness (Vikner, 2001). In generative grammar, agreement is viewed as the matching of grammatical person, number, and gender features (Kayne, 1989). In standard subject–adjective agreement, the subject originates inside the adjective phrase as part of its argument structure, which allows for local feature agreement. By analogy with Kayne's (1989) analysis of participle agreement in French, one might hypothesize that a fronted P-Obj agrees with the predicative adjective through movement. However, Danish alternative agreement is difficult to explain on syntactic grounds alone because (a) it occurs regardless of whether the P-Obj remains *in situ* or is fronted, (b) in the absence of an intervener, and (c) it takes place in a preposition phrase, which, according to Baker (2008), should not be possible.

Conclusion

As the discussion shows, accounting for Danish alternative agreement on predicative adjectives using a single explanatory model is difficult. It seems more plausible that a conspiracy of different factors explains the phenomenon. In our elicitation experiment, the result resembled a 50/50 distribution between standard agreement and alternative agreement when the fronted P-Obj was singular. This remarkable pattern can be attributed to two well-known factors that we know play a role independently of the grammatical phenomenon under scrutiny here—namely, on one hand, the tendency to drop inflectional endings in Danish, and on the other hand, a preference for interpreting the first nominal element as the subject. When these two factors are eliminated, alternative agreement is virtually non-existent; that is, when P-Obj is *in situ* and hence, the initial NP is the subject. When P-Obj was plural and the subject singular, the inflected form of the predicative adjective (alternative agreement by adding *-e*) was used in only 1% of the cases. As “alternative agreement” is not actually an alternative to standard agreement, perhaps “atypical agreement” would be a more appropriate label.

Although we cannot rule out that the phenomenon might reflect a new kind of agreement system interfering with standard subject agreement or that we are witnessing the emergence of a language change, we likewise have no data to support that. Conversely, performance errors are usually not entirely random but often systematic. Moreover, the phenomenon of alternative agreement is in fact systematic and productive, and for the very

same reasons, it appears to be more or less acceptable among Danish speakers.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

KC: Project administration, Data curation, Methodology, Visualization, Validation, Conceptualization, Writing – original draft, Writing – review & editing, Formal analysis, Investigation, Software. AN: Writing – review & editing, Methodology, Writing – original draft, Formal analysis, Investigation, Validation, Funding acquisition, Project administration, Conceptualization.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

- Baker, M. C. (2008). *The Syntax of Agreement and Concord*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511619830
- Bates, D., Maechler, M., and Bolker, B. (2012). *lme4: Linear Mixed-Effects Models Using Eigen and R*. Available online at: <https://cran.r-project.org/web/packages/lme4/> (Accessed January 22, 2025).
- Bock, K., and Miller, C. A. (1991). Broken agreement. *Cogn. Psychol.* 23, 45–93. doi: 10.1016/0010-0285(91)90003-7
- Brink, L., Lund, J., Heger, S., and Jørgensen, J. N. (1991). *Den Store danske udtaleordbog*. København: Munksgaard.
- Christensen, K. R., and Nyvad, A. M. (2019). “De her sætninger er jeg vilde med! Sproglig variation i prædikative adjektivers kongruensmønstre,” in *17. Møde om Udforskningen af Dansk Sprog*, eds. Y. Goldshtein, I. S. Hansen, and T. T. Hougaard (Aarhus: Institut for Kommunikation og Kultur, Aarhus Universitet), 95–113. Available online at: https://projekter.au.dk/fileadmin/projekter/Muds.dk/rapporter/Muds_17.pdf (Accessed December 12, 2019).
- Christensen, K. R., and Nyvad, A. M. (2021). “Vi er (stadig) vild med den her sætning!” in *18. Møde om Udforskningen af Dansk Sprog*, eds. Y. Goldshtein, I. S. Hansen, and T. T. Hougaard (Aarhus: Institut for Kommunikation og Kultur, Aarhus Universitet), 169–186. Available online at: https://projekter.au.dk/fileadmin/projekter/Muds.dk/rapporter/Muds18_2_.pdf (Accessed September 9, 2021).
- Christensen, K. R., and Nyvad, A. M. (2024). Complexity, frequency, and acceptability. *Glossa* 9, 1–44. doi: 10.16995/glossa.10618
- Christensen, R. H. B. (2015). *Ordinal—Regression Models for Ordinal Data*. Available online at: <http://www.cran.r-project.org/package=ordinal/> (Accessed September 9, 2023).
- Christianson, K., Hollingworth, A., Halliwell, J. F., and Ferreira, F. (2001). Thematic roles assigned along the garden path linger. *Cogn. Psychol.* 42, 368–407. doi: 10.1006/cogp.2001.0752
- Comrie, B. (2003). When agreement gets trigger-happy. *Trans. Philol. Soc.* 101, 313–337. doi: 10.1111/1467-968X.00121
- DFF (2017). *Dansk er et Usædvanligt (svært) Sprog*. Available online at: <https://dff.dk/hvad-har-vi-stoet/til-tilspiret-af-tidens-forskning/artikler-om-forskningsprojekter/artikel/2017/september/dansk-er-et-usaedvanligt-svaert-sprog/> (Accessed May 8, 2025).
- Engberg-Pedersen, E., and Poulsen, M. (2010). “Alternative agreement controllers in Danish: usage or structure,” in *Language Usage And Language Structure*, eds. K. Boye and E. Engberg-Pedersen (Berlin: Walter de Gruyter), 205–235. doi: 10.1515/9783110219180.3.205
- Ferreira, F., Christianson, K., and Hollingworth, A. (2001). Misinterpretations of garden-path sentences: implications for models of sentence processing and reanalysis. *J. Psycholinguist. Res.* 30, 3–20. doi: 10.1023/A:1005290706460
- Foppolo, F., and Staub, A. (2020). The puzzle of number agreement with disjunction. *Cognition* 198:104161. doi: 10.1016/j.cognition.2019.104161
- Franck, J., Vigliocco, G., and Nicol, J. (2002). Subject-verb agreement errors in French and English: the role of syntactic hierarchy. *Lang. Cogn. Process.* 17, 371–404. doi: 10.1080/01690960143000254
- Friederici, A. D., Mecklinger, A., Spencer, K. M., Steinhauer, K., and Donchin, E. (2001). Syntactic parsing preferences and their on-line revisions: a spatio-temporal analysis of event-related brain potentials. *Cogn. Brain Res.* 11, 305–323. doi: 10.1016/S0926-6410(00)00065-3
- Garrett, M. F. (2015). “Speech errors, psychology of,” in *International Encyclopedia of the Social and Behavioral Sciences* (Amsterdam: Elsevier), 229–234. doi: 10.1016/B978-0-08-097086-8.52020-0
- Gillespie, M., and Pearlmutter, N. J. (2013). Against structural constraints in subject-verb agreement production. *J. Exp. Psychol. Learn. Mem. Cogn.* 39, 515–528. doi: 10.1037/a0029005
- Grønnum, N. (2005). *Fonetik og Fonologi: Almen og Dansk*, 3rd Edn. København: Akademisk.
- Hansen, P. M. (1990). *Udtaleordbog*. København: Gyldendal.
- Hejné, M., and Walkden, G. (2022). *A history of English*. Berlin: Language Science Press.
- Jensen, E. S. (2019). Peter Og Mig, vi Gik i Biografen. Paratagmer i Ekstraposition i Dansk. *Ny Forskning i Grammatik* 26, 71–88. doi: 10.7146/nfg.v0i26.115994
- Jensen, J. N. (2004). “Dem er jeg helt vilde med! Om fokuskongruens i moderne dansk,” in *På godt dansk. Festskrift til Henrik Galberg Jacobsen i anledning af hans 60 års fødselsdag den 4. februar 2004*, eds. H. Jørgensen and P. S. Jørgensen (Aarhus: Wessel og Huitfeldt), 163–171.
- Kandel, M., Wyatt, C. R., and Phillips, C. (2022). Agreement attraction error and timing profiles in continuous speech. *Glossa Psycholinguist.* 1, 1–46. doi: 10.5070/G601157
- Kayne, R. S. (1989). “Facets of Romance past participle agreement,” in *Dialect Variation and the Theory of Grammar*, ed. P. Benincá (Berlin: De Gruyter), 85–104. doi: 10.1515/978311086255-005
- Keung, L.-C., and Staub, A. (2018). Variable agreement with coordinate subjects is not a form of agreement attraction. *J. Mem. Lang.* 103, 1–18. doi: 10.1016/j.jml.2018.07.001
- Kimball, J., and Aissen, J. (1971). I think, you think, he think. *Linguistic Inquiry* 2, 241–246.
- Krebs, J., Malaia, E., Wilbur, R. B., and Roehm, D. (2018). Subject preference emerges as cross-modal strategy for linguistic processing. *Brain Res.* 1691, 105–117. doi: 10.1016/j.brainres.2018.03.029
- Lago, S., Shalom, D. E., Sigman, M., Lau, E. F., and Phillips, C. (2015). Agreement attraction in Spanish comprehension. *J. Mem. Lang.* 82, 133–149. doi: 10.1016/j.jml.2015.02.002
- Laurinavichyute, A., and von der Malsburg, T. (2024). Agreement attraction in grammatical sentences and the role of the task. *J. Mem. Lang.* 137:104525. doi: 10.1016/j.jml.2024.104525
- Lenth, R. V. (2025). *emmeans: Estimated Marginal Means, aka Least-Squares Means*. Available online at: <https://rvinlenth.github.io/emmeans/> (Accessed July 7, 2025).
- Mikkelsen, L. (2015). VP anaphora and verb-second order in Danish. *J. Ling.* 51, 595–643. doi: 10.1017/S0022226715000055
- Nyvad, A. M. (2007). *Revisiting Agreement Paradigms: Predicative Adjectives in Danish*. London: University College London. Available online at: https://www.researchgate.net/publication/238108068_Revisiting_Agreement_Paradigms_Predicative_Adjectives_in_Danish (Accessed January 15, 2021).
- Nyvad, A. M., and Christensen, K. R. (2023). “Vi har fundet nogle sætninger på nettet, og dem er folk vild med! Når performansen halter,” in *19. Møde om Udforskningen af dansk sprog*, eds. K. Boas, I. S. Hansen, T. T. Hougaard, and E. L. Overgaard (Aarhus: Aarhus Universitet), 249–263. Available online at: https://projekter.au.dk/fileadmin/projekter/Muds.dk/rapporter/MUDS_19.pdf (Accessed July 1, 2025).
- Nyvad, A. M., Ehlers, K. R., and Christensen, K. R. (2025). *Fundamentfeltet kan Fyldes med lidt af Hvert. En undersøgelse på tværs af KorpusDK, Hestenettet og LANCHART*. Ny Forskning i Grammatik.
- Puggaard, R. (2019). Flexibility of frequent clause openers in talk-in-interaction: det ‘it, that’ and så ‘then’ in the prefield in Danish. *Nord. J. Linguist.* 42, 291–327. doi: 10.1017/S0332586519000088
- R Core Team (2021). *R: A Language and Environment for Statistical Computing*. Vienna: R Foundation for Statistical Computing. Available online at: <https://www.R-project.org/> (Accessed January 12, 2022).
- Schachtenhaufen, R. (2023). En lang vokallyd? : Konsonant-vokal-ratio i dansk. *NyS Nydanske Sprogstudier* 64, 51–87. doi: 10.7146/nys.v1i64.141689
- Schack, J. (2013). Dig og mig og vi to. Synspunkter på kasus i moderne dansk. *NyS Nydanske Sprogstudier* 45, 48–72. doi: 10.7146/nys.v45i45.16904
- Staub, A. (2010). Response time distributional evidence for distinct varieties of number attraction. *Cognition* 114, 447–454. doi: 10.1016/j.cognition.2009.11.003
- The Listen and Learn Blog (2020). *Scandinavian Languages: All You Need to Know*. Available online at: <https://www.listenandlearnaustralia.com.au/blog/scandinavian-languages-need-know/> (Accessed May 8, 2025).
- Thorsen, L. (2021). Ny forskning: Dansk er undtagelsen fra reglen om, at alle sprog er lige lette at lære. *Politiken*. Available online at: <https://politiken.dk/kultur/art8288449/Dansk-er-undtagelsen-fra-reglen-om-at-alle-sprog-er-lige-latte-at-l%C3%A6re> (Accessed May 8, 2025).
- Vigliocco, G., and Nicol, J. (1998). Separating hierarchical relations and word order in language production: is proximity concord syntactic or linear? *Cognition* 68, B13–B29. doi: 10.1016/S0010-0277(98)00041-9
- Vikner, S. (2001). “Predicative adjective agreement. Where German may be ‘easy’, but French and Danish are not ‘easies,’” in *Sprachkontakt, Sprachvergleich, Sprachvariation*, eds. K. Adamzik and H. Christen (Tübingen: Max Niemeyer Verlag), 399–414. doi: 10.1515/9783110917437.399
- Villata, S., Rizzi, L., and Franck, J. (2016). Intervention effects and relativized minimality: new experimental evidence from graded judgments. *Lingua* 179, 76–96. doi: 10.1016/j.lingua.2016.03.004
- Wagers, M. W., Lau, E. F., and Phillips, C. (2009). Agreement attraction in comprehension: representations and processes. *J. Mem. Lang.* 61, 206–237. doi: 10.1016/j.jml.2009.04.002
- Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., et al. (2019). Welcome to the tidyverse. *J. Open Source Softw.* 4:1686. doi: 10.21105/joss.01686