

Variation with *amn't* is explained by productivity, not competition

We argue that dialectal variation with respect to the *amn't* gap is best explained in terms of the productivity of negative affixation rules and not morphosyntactic competition.

Previous work. Bresnan (2001) notes a puzzle concerning the distribution of *amn't* across dialects: while it is gapped and replaced by *aren't* in most dialects (inc. StE; 1), it is possible both in inversions and declaratives in Hiberno-English (HbE) and only in inversions in Scottish English (ScE); see (1-3). Bresnan proposes an analysis in terms of competition: in ScE the Scots-specific *amnae* outcompetes the more marked *amn't* in declaratives, whereas in StE (which lacks *amn't* by accident) *am not* outcompetes a mismatching default *aren't*. Since these competitors are impossible in inversions (1c, 3b), the more marked forms occur in tags.

1. a. I'm not your friend. b. I'm your friend, aren't I? c. *I'm your friend, am not I?
2. a. I amn't your friend. *ScE, ✓HbE b. I'm your friend, amn't I? ✓ScE, ✓HbE
3. a. I amnae your friend. b. *I'm your friend, amnae I?

New data. We present preliminary data from the *Scots Syntax Atlas* survey (370 speakers in 96 locations; ages 18-25, 65+) which shows that the picture in Scotland is much more complex than what Bresnan describes. Based on judgment data for examples with *amn't* in declaratives (2a) and tags (2b), as well as declarative *amnae* (3a), we make the following observations:

- (i) 2b is accepted by at least one person in almost every location surveyed
- (ii) *amn't* is more widely accepted by young speakers than by older speakers.
- (iii) although the *2a✓2b pattern is the most common, the HbE pattern ✓2a✓2b is also quite widespread, in particular among young people.
- (iv) 2a and 2b are widely accepted in the highlands by both generations.
- (v) 2a is rejected by all speakers in the NE corner and almost all older speakers in Fife.
- (vi) there is individual-level variation in many localities in the central belt.
- (vii) outside of the highlands (where *-nae* is not used), there is a significant correlation between scores for declarative *amn't* and *amnae*, esp. for older speakers ($R = 0.67$)

This reveals a complex interaction between *amn't* and *-nae* in non-inversion contexts: while (vii) indicates that accepting *amnae* often comes with accepting declarative *amn't*, there's wider acceptance of *amn't* in the *-nae*-less regions (highlands) and among young people, who we know from corpus data to be using *-nae* forms less than older speakers in most of the country, although both *-nae* and *-n't* forms are still used and accepted by young and old. As for (v), what sets the NE and Fife apart is that they have wider ranges of irregular *-nae* forms in their inventories (*daa* for *don't*, *winna* for *won't* in both regions, various null auxiliary forms in the NE, Smith 2000). We propose that these interactions can be understood in terms of productivity: the morphological inventory of one negative affixation rule impacts upon the other rule.

-n't and productivity. Yang (2017) proposes an account of **amn't* in terms of productivity, with his Tolerance Principle (2002, 2016, TP) defining the threshold for a productive rule. On Yang's account, learners who are exposed to negated auxiliaries in the input posit rules for affixation of the *-n't* to auxiliaries, and whether such a rule becomes productive and is retained as part of their grammar depends on whether the number of exceptions to that rule is below the threshold defined by the TP. The threshold is a function of the number of putative output forms for the rule which are robustly attested in the input, with a higher N tolerating proportionally fewer exceptions. Learners posit the most general rule possible, and if this doesn't achieve productivity they narrow down to a more specific rule. Gaps come about when a narrow productive rule doesn't generate a given form and that form is not robustly attested in the input.

The task for making this analysis work is to show that there is no productive rule which would generate *amn't*. Yang first considers the most general rule, given in (4a), which would apply to all 18 robustly attested fails to achieve productivity in StE because it has 12 exceptions, in (4b). Note that this includes 6 exceptions from suppletive *ain't* being used for all forms of present *be* and *have*; without this, the rule would be productive. With (4a) failing to become productive, StE learners subdivide the attested forms and posit a more specific rule, one which only applies

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to auxes which end in obstruents, (5a); this only has one exception, (5b), and so it is productive. Crucially, (5a) doesn't generate *amn't*, so this is gapped.

4. a. NEG → ɲt b. Exceptions: *can't, won't, don't, mustn't, aren't, weren't, ain't* (x6)
 5. a. NEG → ɲt / +obstruent b. Exceptions: *mustn't* (unpredictable /t/ deletion)

Yang suggests that the reliance on *ain't* is a virtue of his account as it gives us an explanation of the present of *amn't* in Ireland and Scotland, where *ain't* is virtually absent from vernacular speech (Anderwald 2004). But there are problems with this explanation; for instance, Welsh English is described as lacking *ain't* (Szmrecsanyi & Kortmann 2009) as well as *amn't* (Kortmann 2008), and WE typically shares the same inventory of negated auxiliaries as HbE.

We propose a fix for Yang's analysis which provides the basis for an explanation of the Scots data. First, we note that the inventory of exceptions in 4b must include an additional contracted form of *don't*, [dɔ], which as Kaisse (1985) argues must be stored as a portmanteau. Adding [dɔ] to 4b renders 4a unproductive even without *ain't*, thus predicting the absence of *amn't* in WE. Second, the list of exceptions to 4a is different for HbE: whereas in AmE and WE *aren't* and *weren't* are monosyllables (e.g. [arnt] in AmE and [a:nt] in non-rhotic British dialects), in HbE they are typically bisyllabic (e.g. [arɲt] or [arɲnt]) and thus fit with 4a. The HbE analysis extends to the Highlands Scots, which has the same negative auxiliary inventory and the same tendency to realise *aren't* and *weren't* as bisyllabic. This gives us an account of (iv), and the beginnings of an account of (vi): *aren't* and *weren't* are pronounced variably as mono- and bisyllabic in the central belt; on the account sketched so far this predicts a more StE-like inventory for *-n't* in the central belt and hence more gapping of *amn't*. But this can only be part of the picture, since *amn't* is accepted in tags all over but not at all in declaratives in the NE, where *aren't/weren't* are bisyllabic. Our claim is that the other ingredient is *-nae*.

To begin with we must determine how the addition of *-nae* forms to the mix impacts upon the acquisition of a NEG affixation rule; clearly *-nae* forms are exceptions to *-n't* affixation rules and vice versa, so learners must subdivide the input and posit contextually restricted rules. We suggest that a number of different options present themselves to learners and thus give rise to the variation we see across the country. For the first pass, the most obvious division of the data may seem to be between *-nae* and *-n't*, with the two forms being analysed as different heads that are subject to different rules. However we suggest that the most salient division to make in the input is between negated auxiliaries in T and those in C, since this division is cued both by phonological properties (linear order) and semantic properties (NEG in C differs from standard negation in a number of ways, cf. Holmberg 2010). We therefore propose that the learners posit the rule in 6a, which treats only those auxiliaries in T. This becomes productive and generates *amn't* in inversions, even in the central belt where *aren't/weren't* are monosyllabic, because is a reduced inventory of exceptions in C: [dɔ] doesn't occur in C, *mustn't* is extremely rare in C, and *-nae* forms don't invert. In the talk we outline the different ways in which other tag-specific forms of negated auxiliaries (*innit* and its kin) influences whether 6a becomes productive.

6. a. NEG → ɲt / C b. Exceptions: *can't, won't, don't, (aren't, weren't)* [threshold = 6]
 With this division in place and 6a deriving *amn't* in tags, whether the learner acquires *2a✓2b or ✓2a✓2b thus depends on the rules that learners acquire for NEG in T. We propose that learners first posit rules for the different morphemes like 6a (but restricted to / T) and 7a, and, if they don't become productive, narrower versions like 5a. the key claim is that once they have rules for each morpheme, they may then posit a *variable rule* like 9a. The number of exceptions to 9a varies across dialects: in areas with more irregular *-nae* or with forms it falls short of productivity; in areas with monosyllabic *aren't/weren't* it only becomes productive if irregular *-nae* forms are reduced. We show that this allows us to account for the variation with 2a.

7. a. NEG → ne / T b. Potential exceptions: *dinnae, winnae, daa, -na* (zero aux)
 8. a. NEG → ɲt / T b. Potential exceptions: *6b + mustn't, [dɔ]*
 9. a. NEG → ɲt or ne / T b. Potential exceptions: *7b + 8b*