English Language and Linguistics, 24.1: 23–47. © Cambridge University Press 2018
doi:10.1017/S1360674318000199

Transatlantic perspectives on variation in negative expressions[1]

CLAIRE CHILDS
University of York

CHRISTOPHER HARVEY
University of Toronto

KAREN P. CORRIGAN
Newcastle University

and

SALI A. TAGLIAMONTE
University of Toronto

(Received 3 May 2017; revised 20 June 2018)

Negation with indefinite items in English can be expressed in three ways: *any*-negation (*I didn't have any money*), *no*-negation (*I had no money*) and negative concord (*I didn't have no money*). These variants have persisted over time, with some studies suggesting that the newest variant, *any*-negation, is increasing at the expense of *no*-negation (Tottie 1991a, 1991b). Others suggest that although this variable was undergoing change in earlier centuries, it is stable in Modern English (Wallage 2017). This article examines the current state of the variability in four communities within two distinctive English-speaking regions: Toronto and Belleville in Ontario, Canada, and Tyneside and York in Northern England. Our comparative quantitative analysis of speech corpora from these communities shows that the rates of *no*-negation vary between Northern England and Ontario, but the variation is largely stable and primarily conditioned by verb type in a robust effect that holds cross-dialectally: functional verbs retain *no*-negation, while lexical verbs favour *any*. The social embedding of the variability varies between the communities, but they share a common variable grammar.

Keywords: negation, indefinites, comparative sociolinguistics, morphosyntactic variation, language variation and change

[1] This article is a thoroughly revised and redeveloped version of our earlier working paper published in the *University of Pennsylvania Working Papers in Linguistics* 21(2), 2015. We gratefully acknowledge the financial support from the Economic and Social Research Council's North East Doctoral Training Centre (for an award granted to the first author), the Arts and Humanities Research Council (for awards granted to the second author) and the Economic and Social Research Council of the UK and the Social Science and Humanities Council of Canada (for awards granted to the fourth author). We would also like to thank Jack Chambers, Elizabeth Cowper, Anders Holmberg, Heike Pichler, Jennifer Smith, Jennifer Thorburn, Joel Wallenberg and Hedde Zeijlstra for comments and discussion on this variable over the past few years, as well as audiences at NWAV43 (Chicago), ICLaVE8 (Leipzig) and ICAME36 (Trier). Many thanks also go to the DECTE project team for access to the Tyneside data.

1 Introduction

English has three strategies for expressing negation with an indefinite item, which in this article are termed *any*-negation, *no*-negation and negative concord, respectively. *Any*-negation features a negative marker *not* on the verb (or the enclitic *n't* as in (1)), which has scope over an indefinite negative polarity item with the form *any(-)*, such as *any*, *anything*, *anyone* or *anybody*. *No*-negation, illustrated in (2), lacks *not* and instead shows negation on the indefinite item itself, as in *no*, *none*, *nothing*, *no one* or *nobody*. Negative concord features both *not/n't* on the verb and a *no-* form, as in (3), but is interpreted as a single instance of negation.[2]

(1) I was**n't** paying **any** rent here (York, M/26)[3]
(2) There's **nothing** you can do about it (Toronto, M/24)
(3) I have**n't** got you **nothing** yet (Tyneside, F/19)

The historical development of negation in English can illuminate how *any*-negation, *no*-negation and negative concord have evolved, which in turn will help explain their contemporary distribution. In Old English, the primary negator was *ne*. When used, *ne* always appeared immediately before the main verb as a proclitic (Ingham 2013: 123). In addition to *ne*, negative clauses sometimes featured a negative adverb with forms including *nāwiht*, *nāht*, *nōht* and *nōwiht*, as in (4) (Nevalainen 1998: 267). This became more common in the Middle English period, during which *nowiht* grammaticalized leading to the development of a compulsory post-verbal form *not* (van Kemenade 2000: 58; Iyeiri 2001: 86; Wallage 2012: 722), as shown in (5).[4] Negative concord with indefinite items, as in (3) above, was common in Middle English (Jack 1978: 38), but *no*-negation could also be used once 'n-item indefinites became able to introduce negation by themselves' (Ingham 2013: 144–5). In Early Modern English, the co-occurrence of multiple negative markers declined in frequency, while the occurrence of *not* with *any*-items (shown in (6)) became possible in a change reportedly led by the upwardly mobile middle classes, particularly men (Nevalainen 1998: 277–8, 2006: 580; Nevalainen & Raumolin-Brunberg 2006). The choice of *any*-negation over negative concord at that time has been described as 'a selective process from above in terms of the speaker-writer's education and social status' (Nevalainen 2006: 580).

(4) He **nōwiht** t**ō** gymeleste **ne** forlet (Bede 206, 17)
'He didn't leave no whit (nothing) to neglect'
(5) thou **n'**art **nat** put out of it (Chaucer's Boece, Book I, P5, 9–10) (14th C)
'you [NEG] are not put out of it'

[2] Many examples of negative concord can have a double negation interpretation, especially when the indefinite is stressed (e.g. I haven't got you NOTHING = 'I've got you something'). Double negation is rare and is not semantically equivalent to *any*-negation, *no*-negation and negative concord, so tokens of this type fall outside the variable context.

[3] The information in parentheses refers to the location, sex and age of the individual.

[4] The path of development was therefore as follows (with the possibility of additional orthographic variation): *nōwiht* > *nauht* > *not* (Rissanen 1999).

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

(6) to enjoyne the said Baxter **not** to prosecute **anie** accion
'to order the said Baxter not to prosecute any action' (Bacon 1590, *Privy Council* III, 99)

Any-negation had thus become a viable alternative to *no*-negation in Early Modern English. Did *any*-negation increase in frequency at the expense of *no*-negation? Willis *et al*. (2013: 38) suggest that this has been happening since the Middle English period, but Ingham (2013: 146) notes that *any*-negation 'did not quickly displace *no* negation', as *no*-negation was the favoured variant in sixteenth-century letters. He suggests that increases in the frequency of *any*-negation over time may be related to the introduction of negative auxiliaries (e.g. *don't*) that became used more often from the sixteenth century onwards (Ingham 2013: 146). Alternatively, the purported increase in *any*-negation 'may well be an impression due to the disappearance of multiple negation from the standard' (Mazzon 2004: 100).

To investigate the historical trajectory of the variation, its contemporary patterning and the constraints on use, Tottie (1991a, 1991b) undertook an extensive quantitative investigation of *any*-/*no*-negation in corpora of Standard British English. Her most contemporary data consisted of two samples from the 1960s – written prose (excluding fiction) from the *Lancaster–Oslo/Bergen Corpus of British English* (LOB) and spoken spontaneous conversation from the *London–Lund Corpus of Spoken English* (LLC). In these samples, *no*-negation was most preferred with existential BE constructions, followed by stative HAVE and copula BE, whereas lexical verbs tended to occur with *not* (Tottie 1991a, 1991b). Tottie (1991a: 440) suggests that these effects reflect lexical diffusion of *any*-negation over time, namely that 'the more frequent a construction is, the more likely it is to be retained in its older form for a longer period of time'. When comparing these data with a sample of written texts from the *Helsinki Corpus of English Texts* (1640–1710), she observes an increase in the frequency of *no*-negation (for all verb types except copula BE) which she suggests 'could indicate that there has been a development from *no*-negation to *not*-negation [*any*-negation] between the late seventeenth century and the present day' (Tottie 1991a: 462).

While this trajectory of change seems plausible, the evidence provided in support of this conclusion is not entirely convincing. Firstly, the quantitative trend towards *any*-negation may have been biased by the inclusion of invariable sentences in the analysis (i.e. tokens where only one variant was possible) alongside variable ones – a decision which was taken 'because of the problems involved in assessing variability in the historical sample' (Tottie 1991a: 461). Secondly, the data used to establish verb frequency can likewise be critiqued. Tottie (1991a, 1991b) refers to DO, KNOW, GIVE and MAKE as the lexical verbs that are most frequent with *no*-negation and links this to their relatively high frequency overall, as indicated by their high ranking among *c*.6000 items in Francis & Kučera's (1982) *Frequency Analysis of English Usage*: MAKE (rank 40); KNOW (rank 63); GIVE (rank 72). Although Francis & Kučera (1982) also rank DO, HAVE and BE as more frequent than other (lexical) verbs, which creates a parallel between frequency and rate of *no*-negation, Tottie (1991a) points out that this source does not distinguish between main and auxiliary functions of verbs. It is also not clear what the frequency rank was for the other lexical verbs in the sample and

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

whether this correlates with their rate of *no*-negation. The rates of *no*-negation for DO, MAKE, KNOW and GIVE are calculated based on relatively few tokens and the trends in use fluctuate between speech and writing (Tottie 1991a, 1991b), suggesting that there may not be enough data to interpret the proposed trends unequivocally.

Regardless of whether the frequency-based account is supported, the contemporary variation could indeed reflect 'a process of transition' from *no*-negation to *any*-negation (Tottie 1991b: 235). However, a more recent corpus-based investigation by Wallage (2017), who investigated the evidence for change both historically and in modern Standard English, found no evidence of ongoing change. In his comparison of the variation in the *Penn–Helsinki Parsed Corpus of Early Modern English* (PPCEME) and the *British National Corpus* (BNC), the frequency of variants was consistent, as were the verb type constraints, leading him to conclude that the results 'suggest historical persistence of variation rather than ongoing change' (Wallage 2017: 197). Childs' (2017) quantitative analysis of this variable in contemporary regional varieties of English spoken in Glasgow (Scotland), Tyneside (North East England) and Salford (Greater Manchester) similarly found no evidence of a change in progress towards *no*-negation, corroborating Wallage's findings. As summarized in section 3 of this article, Childs (2017) also highlights some methodological issues concerning Tottie's (1991a, 1991b) definition of the variable and the variable context.

Our aim in this article is to investigate the potential competition between *any*-negation, *no*-negation and negative concord, to establish whether the variation in contemporary Englishes reflects an ongoing diachronic change from *no*-negation to *any*-negation or is instead more indicative of a change which has now become stable. To this end, we examine the phenomena in two sets of vernacular speech corpora, from Northern England and Ontario, Canada, to see whether attending to geographic, linguistic and social factors can offer insights into the current state of the variation.

2 Corpora and samples

The corpora comprise vernacular sociolinguistic interviews with native English speakers, conducted in Northern England and Ontario, Canada. A preliminary study of negation in Ontario was made based on the Canadian corpora analysed here (Harvey 2013). In the present article, we aim to determine whether similar language internal and external tendencies exist in geographically distinct varieties of English, through a comparison of two varieties on either side of the Atlantic: Ontario English and Northern British English. These dialects share historical links in the sense that the vast majority of the early founder populations (Mufwene 2001: 27–9) to Ontario hailed from the British Isles. Southern Ontario was predominately settled by migrants of British descent from the United States (Loyalists),[5] whereas more northern climes

[5] Loyalists were American colonists, of different ethnic backgrounds, who supported the British cause during the American Revolution (1775–83). They migrated to British North America during and after the revolutionary war, boosting and diversifying the population as well as heavily influencing the culture and politics of what would eventually become Canada (White 1996).

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

Table 1. *Speaker sample*

Community	14–19	20–29	30–39	40–49	50–59	60–69	70–79	80+	TOTAL
North East England	26	19	4	7	10	7	6	0	79
York, North Yorkshire	6	15	9	10	11	16	20	8	95
Toronto, Ontario	5	20	12	18	12	8	11	8	94
Belleville, Ontario	5	3	4	4	4	5	7	5	37

had significantly more migrants from Northern England, Scotland and Ulster (see Cowan 1961: 288; Elliott 2004: 65; Boberg 2010: 77). We therefore adopt a comparative approach, analysing the distribution of *any*-negation, *no*-negation and negative concord across our target locales to (i) establish how variation is conditioned within the grammar(s) of English; (ii) identify how the variation is socially conditioned; and (iii) assess the evidence for linguistic change in progress and the state of the variation in the different varieties (Tagliamonte 2013: 186).

The Canadian recordings (Tagliamonte 2003–6) are from Toronto, a major urban area with over 5 million inhabitants, and Belleville, a town of approximately 50,000 residents situated two hours east of Toronto. The two locales have distinctive demographic profiles: Toronto is a diverse multicultural urban centre while Belleville is more homogenous with a strong history of Loyalist settlement.

The British recordings are from four Northern English locales, three of which are herein combined as the 'North East of England' since the varieties spoken there share similar dialectal features (Beal *et al*. 2012). These three locales are the urban Tyneside region and two nearby smaller urban areas, Wheatley Hill and Durham, in County Durham. The Tyneside dataset consists of a sample of recordings from the *Diachronic Electronic Corpus of Tyneside English* (DECTE, Corrigan *et al.* 2010–12), while the dataset from Wheatley Hill and Durham is from Tagliamonte (1998, 2003). We compare the results from North East England with those from York (Tagliamonte 1996–8, 1998, 2003), a major city in North Yorkshire, where the native dialect is distinct from that spoken in the North East but they share certain pan-Northern English linguistic features (Trousdale 2012; Buchstaller & Corrigan 2015).

The conversations within these sociolinguistic interviews, which were designed to elicit vernacular speech, are informal. They contain many narratives of personal experience about childhood, hobbies and interests, as well as local history. The interviewees' speech is representative of the dialect of their local area, having all been born and raised in their respective locales. The corpora have different sizes and the distribution of speakers by age varies across the datasets.[6] In total, there are 305 speakers in our sample and their ages range from 14 to 80+, as table 1 shows.

[6] However, the number of speakers in a given cell is not necessarily proportional to the number of tokens they produce.

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

The recordings provide ample tokens of the variable under study, and rich intra-speaker variation, as shown in (7) and (8).[7] In (7), the clause construction is the same each time, featuring existential *there were* and the complement *jobs*, but the speaker alternates between *any*-negation for the first sentence and *no*-negation for the second. Similar optionality is shown in (8): negation can be expressed within the verb phrase (8a) or on the indefinite (8b).

(7) (a) There were**n't any** jobs.
(b) There were **no** jobs to be had (Toronto, F/43)

(8) (a) I do**n't** have **any** information.
(b) you had **no** option (Belleville, M/33)

3 The variable context

All instances of *any*-negation, *no*-negation and negative concord were extracted from our sample. *Any*-negation tokens feature the indefinite items *any*, *anybody*, *anyone*, *anything*, *owt* (found exclusively in the British data, meaning 'anything') or *anywhere* in the predicate. These are prototypically licensed by a negative marker (*not/n't*) on the preceding verb in the clause, which has scope over the indefinite. Within prepositional phrases (henceforth PPs), indefinite *any-* items are often licensed in this same way (9a), but they can also appear alongside elements such as *without* (10a). *No*-indefinites can also occur in these environments with no change in referential meaning, as (9b) and (10b) illustrate.

(9) (a) We're **not** under **any** obligation
(b) We're under **no** obligation (Toronto, F/29)

(10) (a) … someone else was appointed **without any** reference
(b) … someone else was appointed **with no** reference (York, F/24)

Tokens of *no*-negation feature the negative counterparts to the indefinite *any-* items, namely *no/none*, *nobody*, *no one*, *nothing*, *nowt* ('nothing' – exclusively in the British data) and *nowhere.* Negative concord tokens were also captured using this latter set of search terms, since they feature these *no*-forms (in addition to a negatively marked verb). Instances of *never* and *n't/not…ever* were not extracted because *never* is near-categorically used in this environment, so including those tokens in our analysis would bias the results (Tottie 1991b: 109; Childs 2017).

The variable context excludes tokens with a negatively marked verb that has scope over the articles *a/an* or zero determiner, i.e. sentences of the type in (11a).

(11) (a) well she said # that does**n't** make sense # that's the cheapest of the lot
(b) well she said # that makes **no** sense # that's the cheapest of the lot
(Tottie 1991b: 178, 211)

[7] Though see the proviso regarding negative concord tokens in our discussion of the distribution of variants in section 5.

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

Although some previous studies of *any*-negation and *no*-negation interpret sentences like (11a) and (11b) to be semantically equivalent and include them in their analysis (Tottie 1991a, 1991b), we consider the underlying form of *makes no sense* in (11b) to be *doesn't make any sense*, rather than *doesn't make sense* like in (11a). Our rationale is as follows.

Childs (2016, 2017) argues that *a/an/ø* are not equivalent to *any* because they have distinct semantic and syntactic properties. Firstly, unlike the *a/an/ø* items, *any* is a negative polarity item which expresses 'a kind of extreme non-specificity' (Lyons 1999: 37) that the former do not – i.e. they are 'less exception-tolerant' (Chierchia 2013: 27).

Secondly, several investigations of negative concord in different varieties of English find that *a* and *an* either do not undergo negative concord at all, or do so very rarely (Labov 1972a: 806; Cheshire 1982: 66; Smith 2001: 131). Although Howe (2005) finds examples of this kind in African American Vernacular English (AAVE), Labov (1972a: 810–11) had argued (also based on AAVE) that such instances arise because *any* is inserted prior to negative concord taking place. This can explain why (12b) and (12c) are equivalent in emphatic force while (12a) is much weaker.

(12) (a) He did**n't** have **a** car.
(b) He did**n't** have **any** car.
(c) He did**n't** have **no** car.

Thirdly, Tottie (1991b: 205) reports that her informant judged *he is not/isn't a moralist* as semantically equivalent to *he is no moralist*, but not semantically equivalent to *he is not/isn't any moralist*. This judgement is contrary to the overwhelming consensus that *no* is equivalent to *not any* (Quirk *et al*. 1985: 782; Tieken-Boon van Ostade 1997: 188; Anderwald 2002, 2005; Peters 2008; Peters & Funk 2009; Wallage 2017). Tottie (1991b: 130) rightly argues elsewhere that *Bill is not a doctor* and *Bill is no doctor* do not have the same meaning since the former is a denial while the latter expresses the view that Bill 'lacks the essential qualities' to be a good doctor. This same explanation can be extended to *he is no moralist*, yet that sentence was included and *Bill is no doctor* was not.

Fourthly, although Tottie includes indefinite articles/zero determiners in her variable context, she acknowledges that instances of indefinites with *not*-negation that do permit *no*-negation tend to have *any* (or potentially allow it), and that *no*-negation similarly tends to correspond to an underlying *any* rather than *a/an* or zero determiners (Tottie 1991b: 263).

We therefore argue based on the discussion in Childs (2016, 2017) as summarized above that *no*-negation is semantically equivalent to *n't/not…any-* constructions, rather than *n't/not…a/an/ø*. We thus exclude the latter token types and use the term *any*-negation to refer to the former.

The extracted tokens were rigorously sorted to remove those that fall outside the precise variable context described above. Several other contexts appear to be candidates for *any/no*-negation and negative concord, but there are cases where either

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

variation is not possible or *any*-negation is not semantically equivalent to *no*-negation, which we outline below.

3.1 *Indefinites in subject position*

As our variable context requires *any*-/*no*-forms to be in the predicate, we excluded indefinites in subject position. *No* is categorical in this context (13a) and alternatives with *any*-negation as in (13b) did not appear in any of the corpora. Indeed, these are rare even in other varieties such as those spoken in Ireland in which the failure of negative attraction is possible for some speakers (Harris 1984: 305; Filppula 1999: 179–81; 2008: 338). These tokens are therefore not considered further in the investigation.

(13) (a) **Nobody** would sit in that seat (Toronto, M/36)
(b) *__Anybody__ would__n't__ sit in that seat

3.2 *Presence of adverbs*

The presence of an adverb in the clause restricts the choice of variant. For example, when *actually* is in the immediate scope of a negative marker, as in (14a), the sentence is interpreted as 'a hedged statement' (Paradis 2003: 202). In contrast, (14b) has 'the function of emphasizing the subjective judgement of the importance of the situation involved in the proposition in question' (Paradis 2003: 194). Other adverbs such as *absolutely* cannot occur after negation (15b), only before it (15a). Therefore, tokens containing adverbs were excluded from the sample given the lack of semantic equivalence between variants.

(14) (a) I did__n't__ actually need **anything** (York, F/52)
(b) I actually needed **nothing**
(15) (a) There's absolutely **no** flights out of Victoria (Toronto, M/49)
(b) *There's **not** absolutely **any** flights out of Victoria

3.3 *Negative raising or cross-clausal negation*

In cross-clausal or negative raising contexts, the movement of the negative marker changes the meaning or force of the sentence, as demonstrated by the subtle differences in (16). Furthermore, certain negative raising constructions such as *I don't think* are formulaic and have become grammaticalized (Scheibman 2000; Pichler 2013), which leads to use of the *any*-negation variant. Cross-clausal negation was thus also excluded from our sample.

(16) (a) **I don't think** I would change anything (Tyneside, F/18)
(b) I think I would__n't__ change **anything**
(c) I think I would change **nothing**

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

3.4 *Adjectival complements*

As Tottie (1991b: 131) notes, *any-* and *no*-negation often differ in meaning when there is an adjectival complement. Examples like (17a) had already been excluded for having no determiner and it is clear that (17b) has a much stronger, more emphatic reading. Pairs like this are therefore not semantically equivalent and likewise do not form part of the variable context.

(17) (a) It does**n't** look good for a Christian woman (M/SG/121, Tyneside)
(b) It looks **no** good for a Christian woman

3.5 *Unclear tokens*

Tokens that were unclear in the audio/transcripts, occurred in unfinished clauses or were ambiguous in any respect were similarly excluded from our sample as in these cases we could not be certain as to their classification.

Observing all of these procedures produced 1,821 tokens where *any*-negation, *no*-negation, and negative concord were all viable with semantically equivalent meanings.

4 Coding

We coded for both grammatical and social factors. The grammatical factor is verb/construction type, which has been found to be a major factor governing the variation in previous research (Tottie 1991a, 1991b; Childs 2017; Wallage 2017).

Verb/construction type was coded according to the categories in (18). Existential *there* + BE constructions consistently have the highest rates of *no*-negation, while lexical verbs have the lowest and tend to have *any*-negation. The percentages of *no*-negation for BE, HAVE and HAVE GOT differ between previous studies but consistently rank between the existentials and lexical verbs in this regard.

Variation within PPs has drawn considerably less attention in the literature. Although Tottie (1991b: 265–6) examines PPs and notes that *no*-negation is infrequent in this environment, her results are based on her overall sample of both invariable and variable structures, in speech and writing. Tottie's findings for the variable spoken sample, most comparable to the nature of our data (in that they are spoken and comprise only tokens where both *any-* and *no*-negation are possible, in contrast to her 'written' and 'invariable' samples), are inconclusive due to low Ns (N = 4). Although PPs do not feature negative marking on a verb, *any/no* do alternate in this environment, e.g. *without any* versus *with no*, as in (18f). We therefore decided to include PPs as part of our investigation as a point of comparison to examine whether they pattern like the examples of verbal negation.

(18) (a) Existentials (*there* + BE) There was no canteen (Belleville, M/52)
(b) BE It wasn't any particular amount (Tyneside, M/25)

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

(c) HAVE	We had nothing (Toronto, F/19)
(d) HAVE GOT	I haven't got any (Wheatley Hill, F/72)
(e) Lexical verbs	He's not heard anything (York, M/55)
(f) In PP	We'll end up with no Santa's grotto

(Tyneside, M/21)

Our decision to implement binary social variables in our analysis may mask self-imposed social categories that can be pertinent in the analysis of language variation (Eckert 1989, 2000). However, our data emanate from pre-existing large-scale corpora, which precludes taking a more ethnographic approach. Our aim is to analyse the linguistic variable's distribution quantitatively in conjunction with the classic sociolinguistic variables of sex (male/female), age (birth year, ranging from 1906 to 1993) and education (with/without post-secondary education), which will allow us to assess the evidence for change in progress.

5 Distributional analysis

5.1 Locality

Figure 1 shows the overall distribution of negative constructions for the four areas under study.

Negative concord is virtually absent in Toronto, Belleville and York, and occurs rarely (6.6 per cent of the time) in the North East of England. Because of its low frequency, negative concord is henceforth excluded from our quantitative analysis. In contrast, variation between *no-* and *any*-negation is present in all varieties, but the distribution is markedly different for each country. In Canada, the two constructions have near-equal frequency, with a slight preference for *no*-negation in Toronto. In England, *no*-negation dominates at 63 per cent in York and 71.9 per cent in the North East. Given that *any*-negation is the newcomer variant historically, these figures indicate that *any*-negation has made greater inroads into Canadian English dialects, while in Northern British English varieties the older *no*-negation variant endures.

5.2 Verb/construction type

Table 2 shows the distribution of *no*-negation according to verb/construction type in each community, in terms of the categories presented in section 4. The greyed out percentages for HAVE GOT in Toronto and HAVE GOT/BE in Belleville indicate that there are less than 10 tokens in these cells.

Despite the different overall frequencies between the dialects, the patterning of *no*-negation by verb/construction types is remarkably similar in each community. Existentials (*there* + BE) consistently have the highest frequency of *no*-negation, with near-categorical rates in England. Constructions with BE, HAVE and HAVE GOT also have high rates of *no*-negation, ranging from (excluding the two tokens of HAVE GOT in Belleville) 59 per cent in Belleville for HAVE up to 94 per cent in North East England

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

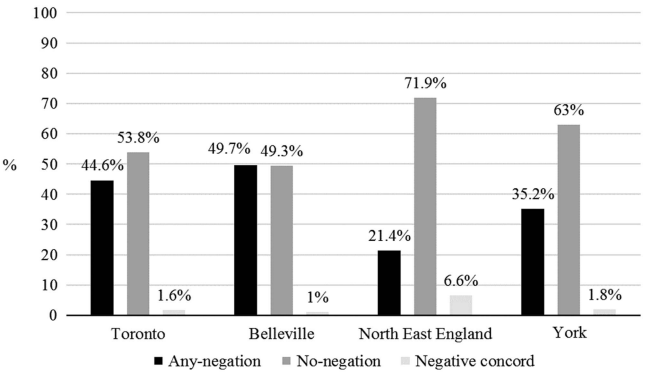

Figure 1. Distribution of *any*-negation, *no*-negation and negative concord in each community

Table 2. *Distribution of* no*-negation per verb/construction type in each community*

	Toronto		Belleville		North East England		York	
	%	N	%	N	%	N	%	N
Existentials	**93**	327	**84**	107	**98**	160	**95**	285
BE	**78**	50	100	8	**94**	36	**88**	57
HAVE GOT	88	8	50	2	**87**	79	**66**	32
HAVE	**66**	272	**59**	61	**77**	79	**64**	188
PPs	**40**	63	**46**	13	**64**	14	**63**	27
Lexical	**13**	390	**7**	108	**36**	111	**19**	223

for BE. In contrast, the lexical verbs have a strong tendency to co-occur with *any*-negation. This pattern is consistent across all four communities, ranging between 7 per cent in Belleville and 36 per cent in North East England. Furthermore, these tendencies are generally in keeping with those observed for this variable in Standard British English (Tottie 1991a, 1991b; Wallage 2017) and varieties of English spoken in Glasgow, Scotland and Salford, Greater Manchester (Childs 2017). The consistency in these trends emphasizes the robustness of the verb type constraint on this variation in grammars of English globally.

PPs are positioned between lexical and functional verbs in terms of their propensity to take *no*-negation, but display different tendencies on each side of the Atlantic: in Ontario, Canada, PPs most often occur with *any*-negation, while in Northern England they tend to occur with *no*. The PP environment is therefore one in which the choice of *any*-negation versus *no*-negation appears to be subject to cross-dialectal differentiation. The over-arching pattern, however, is a marked division between functional verbs (BE, HAVE, HAVE GOT) versus lexical verbs (see also Wallage 2017).

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

Bybee & Hopper (2001) argue that constructions such as existentials are highly frequent and therefore are processed and produced as a whole, which could account for their high propensity to occur with *no*-negation. As discussed in section 1, Tottie (1991a, 1991b) argues that BE and HAVE are also high frequency, making them resistant to change and therefore more likely to retain the variant that is oldest historically, *no*-negation. In contrast, individual lexical verbs are less frequent, which Tottie (1991a, 1991b: 232) argues makes them more likely to undergo change, i.e. take *any*-negation. Tottie (1991b) notes that verbs which have more tokens within her *any*-/*no*-negation variable context do exhibit more *no*-negation, e.g. existentials were higher frequency (N = 38) and had more *no*-negation than copula BE (N = 20), but the evidence for this frequency-based account can be questioned, as discussed in section 1.

In his analysis of *any*-negation and *no*-negation in Ontario, Canada, Harvey (2013) appeals to Tottie's (1991a, 1991b) frequency account to explain collocational tendencies in his data, but suggests that syntactic factors may also be relevant to better understand the verb type effects in speakers' choice of variant. Harvey's (2013) proposal, based on Smith's (2000) account of DO-absence, appeals to the fact that functional and lexical verbs have different movement properties and positions in the syntactic structure relative to the negative operator. Under this account, since BE (obligatorily) and HAVE (optionally) raise for tense and agreement (Pollock 1989) and thus reside in a position that is syntactically close to the negative operator in the functional projection NegP, they are more likely to take *no*-negation. Lexical verbs, on the other hand, obligatorily remain low in the VP with much greater structural distance between them and the operator, making *no*-negation more difficult to derive.

Childs (2017) proposes that this effect could be explained in one of two ways: (i) *no*-forms have an uninterpretable negative feature that must agree with an interpretable negative operator in NegP (Zeijlstra 2004), in which case lexical verbs favour *any*-negation because they remain in a position between the negative operator and the post-verbal indefinite item and thus can disrupt the Agree relation required for *no*-negation/negative concord; or (ii) *no*-negation is distinct from the other two variants in being marked for negation within the post-verbal NP and moving to NegP to receive sentential scope (see Kayne 1998; Svenonius 2002; Zeijlstra 2011; Tubau 2016), which would be dispreferred with lexical verbs since they constitute additional material that the *no*-negation must move across. While the former account predicts that both *no*-negation and negative concord would be dispreferred with lexical verbs, the latter predicts that this is true only of *no*-negation (Childs 2017). Childs (2017) finds in her data from three Northern British communities that the latter account is more strongly supported since *any*-negation and negative concord behaved in tandem with respect to verb type and overall frequency, while *no*-negation was distinct.[8]

[8] As Childs (2017) explains, *no*-negation is expected to be disfavoured under both Accounts 1 and 2 if GOT in HAVE GOT is a main verb. Our finding here that HAVE GOT favours *no*-negation is consistent with Childs' (2017) results, from which she suggested that GOT (in HAVE GOT) may be more transparent to the Agree relation (Account 1) or the movement (Account 2) required for *no*-negation than ordinary lexical verbs are, e.g. since GOT in HAVE GOT is 'semantically void' (Berdan 1980: 388).

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

5.3 *Sex*

Labov's (2001) principles of linguistic change emphasize the role of women as leaders of change, whether it is from above (Principle 3: a conscious change whereby women favour a variant with more prestige) or below (Principle 2: an unconscious change in which women use innovative variants more than men). When we consider the historical context of the variation that we are investigating, we see that the inception and rise in the frequency of *any*-negation over negative concord in Early Modern English has been characterized as a change from above. At that time, *any*-negation certainly fit the definition of a prestige form that is associated with groups of higher status (e.g. Labov 1972b: 138; Van Herk 2012: 48). It was used by people who were more educated and of a higher social standing (Nevalainen 1998: 277–8, 2006; Nevalainen & Raumolin-Brunberg 2006) and was associated with legal, administrative and professional language (Rissanen 2000: 125; Nevalainen & Raumolin-Brunberg 2006: 150). Contrary to what one would typically expect for a change from above, the increasing use of *any*-negation as opposed to negative concord in Early Modern English was led by men (Nevalainen 1998: 277–8, 2006), because at that time women 'did not promote language changes that emanated from the world of learning and professional use, which lay outside their own spheres of "being"' (Nevalainen & Raumolin-Brunberg 2006: 131). That said, while women 'did not prove to be the leading influence in this change, … neither did they lag behind in adopting the innovation' (Nevalainen 1998: 284).

In Present-Day English, it is not clear whether *any*-negation holds any particular prestige over *no*-negation (which the above accounts did not investigate), though this remains a question for future research. We examine the contemporary frequency of *no*-negation (versus *any*-negation) in figure 2. In this distributional analysis, and others pertaining to social variables, we remove existentials given their near-categorical tendency to take *no*-negation.

In figure 2, we see a reversal of the historical association between *any*-negation and men. Male speakers now use *no*-negation more than women in Belleville, North East England and York. In Toronto, on the other hand, there is barely any distinction between the sexes in their use of this variable and this is the only community in which the distribution is not significant.[9]

If these patterns do reflect modern-day competition between variants, the fact that women use *any*-negation more than men in three out of our four communities may not necessarily represent change from above, but change from below (Labov 1966: 207, 1972b: 133). This interpretation would capture women's propensity to lead in unconscious changes towards greater use of an innovative variant without recourse to prestige. While *any*-negation is not a 'recent' innovation, it is historically the newest variant of our negation subtypes. Alternatively, what we may be witnessing here is stable linguistic variation with social patterning between men and women in three of our four communities. Examining how the variation patterns according to speakers'

[9] Toronto (N = 783): $\chi^2 = 0.077$, d.f. = 1, $p > 0.05$; Belleville (N = 192): $\chi^2 = 8.697$, d.f. = 1, $p < 0.01$; North East England (N = 319): $\chi^2 = 15.41$, d.f. = 1, $p < 0.001$; York (N = 527): $\chi^2 = 5.802$, d.f. = 1, $p < 0.05$.

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

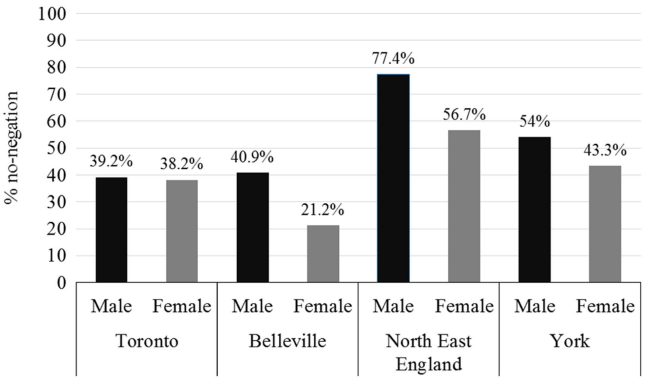

Figure 2. Distribution of *no*-negation in each community according to speaker sex[10]

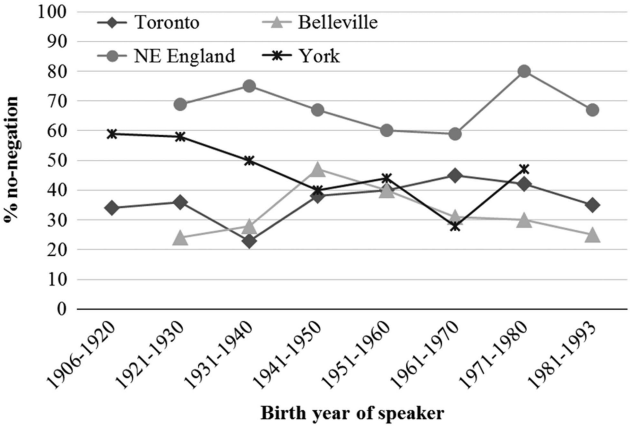

Figure 3. Distribution of *no*-negation in each community according to speakers' birth year

birth year, as we do in section 5.4, offers us a way of further assessing the evidence for present-day change or stability.

5.4 Birth year

To explore whether there is evidence for change or stability in British and Canadian vernaculars, we categorized the data according to speakers' birth year as a proxy for real time. Although there were no speakers born in 1906–20 in the North East England and Belleville samples, and no speakers born in 1981–93 in the York sample, the timespan is nevertheless expansive and allows us to observe diachronic trends in the frequency of *no*-negation (versus *any*-negation), as shown in figure 3.

[10] The number of speakers represented in these data points ranges from 17 (Belleville male speakers) to 51 (Toronto female speakers).

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

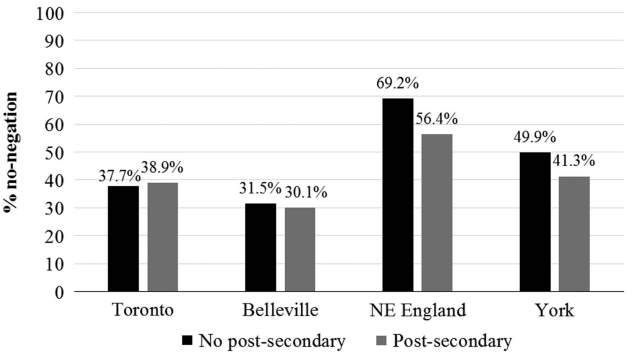

Figure 4. Percentage of *no*-negation in each community according to speaker education

The distribution of variants according to birth year is significant in York, but not in any other locale.[11] In York, there is an upswing among the speakers born in 1971–80 compared to speakers born in the previous few decades. In all communities, even York, there is not a steady increase or decline in the use of *no*-negation. Therefore, taken as a whole, the results more strongly support the third of our three possible interpretations set out in section 5.3, i.e. that the current variation between *any*- and *no*-negation is relatively stable, as opposed to undergoing change from above or below. The nature of these trends is explored further in section 6, where birth year is considered alongside other predictors in a mixed-effects logistic regression analysis to confirm which factors have a significant impact on variant choice while holding the effect of the individual constant.

5.5 *Education*

The final social factor considered here is education, specifically whether a speaker has completed post-secondary education or not. As D'Arcy & Tagliamonte (2010) discovered in their analysis of relative *who*, linguistic items that were once introduced by change from above can retain their distributional association with higher levels of education and professional status several centuries later in corpus-based analysis. Thus, in this section we investigate the possibility that *any*-negation, which had prestige and was introduced in a change from above in Early Modern English (Nevalainen 1998: 277–8, 2006; Nevalainen & Raumolin-Brunberg 2006), may be used at higher frequencies amongst more educated speakers.

Figure 4 shows the relationship between the percentage of *no*-negation and education. Although the distribution is more socially stratified according to education in the two British communities than the two Canadian ones, the effect is not statistically significant

[11] Toronto (N = 783): $\chi^2 = 7.878$, d.f. = 7, $p > 0.05$; Belleville (N = 192): $\chi^2 = 4.361$, d.f. = 6, $p > 0.05$; North East England (N = 319): $\chi^2 = 7.104$, d.f. = 6, $p > 0.05$; York (N = 527): $\chi^2 = 21.711$, d.f. = 6, $p < 0.01$.

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

in any locale.[12] The direction of the pattern is the same in both the North East of England and in York: speakers without post-secondary education use *no*-negation more than those who have been educated beyond secondary school, i.e. those who are more highly educated use *any*-negation at higher rates. Although *no*-negation has been considered 'more literary' (Biber 1988: 245) and is more frequent in writing than speech (Tottie 1991a, 1991b; Biber *et al.* 1999), our data show that this does not equate to a higher use of *no*-negation among more educated speakers.

The distributional results have revealed that both internal and external factors impact upon speakers' choice between *any*- and *no*-negation in British and Canadian English. The following section presents the results of statistical modelling to establish which effects are significant when all are considered simultaneously and to investigate whether they operate consistently on each side of the Atlantic.

6 Statistical modelling

We now undertake mixed-effects logistic regression analysis of the variation using the lme4 package (Bates *et al.* 2015) in *R* (R Core Team 2014), with one model per locale: Toronto, Belleville, North East England and York. The four predictors analysed independently in section 5 were included in the models for each variety: 'verb/construction type', 'sex', 'education' and 'birth year' as fixed effects, plus 'speaker' as a random effect.[13] As the results from section 5.2 revealed that BE, HAVE and HAVE GOT all tend to occur with *no*-negation, these were combined as 'functional verbs', as opposed to 'PPs' and 'lexical verbs'. 'Existentials' were excluded given their near-categorical tendency to take *no*-negation. 'Sex' was coded as 'male' versus 'female', and 'education' as 'secondary' versus 'post-secondary'. 'Birth year' was collapsed from the original eight categories to four larger groups ('1906–30', '1931–50', '1951–70', '1971–93'), to overcome the fact already mentioned that some of the corpora did not have speakers born in 1906–20 or 1981–93 (see figure 3).

Table 3 shows the results of the regression of the factors affecting the choice of *no*-negation over *any*-negation in the four locales.

The results in table 3 reveal that 'verb/construction type' is the major constraint affecting *any*- and *no*-negation, with all four locales displaying a statistically significant effect whereby functional verbs (BE, HAVE, HAVE GOT) strongly favour *no*-negation and lexical verbs disfavour it. The overall frequency of *no*-negation with PPs was earlier found to differ between Canadian English and British English (see section 5.2), but in table 3, the distinction between functional verbs and PPs is significant only in Toronto. Nevertheless, the same propensity holds across the board: in every community, PPs slightly disfavor *no*-negation compared to functional verbs. The fact

[12] Toronto (N = 783): $\chi^2 = 0.094$, d.f. = 1, $p > 0.05$; Belleville (N = 192): $\chi^2 = 0.042$, d.f. = 1, $p > 0.05$; North East England (N = 319): $\chi^2 = 3.694$, d.f. = 1, $p > 0.05$; York (N = 527): $\chi^2 = 2.997$, d.f. = 1, $p > 0.05$.

[13] In most sociolinguistic studies, speakers typically provide multiple tokens of the same variable, which means that the individual tokens are not independent observations. Including speaker as a random effect accounts for this, resulting in more accurate estimates and p-values for the fixed factors than if speaker had not been included as a random effect (Johnson 2009).

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

Table 3. *Mixed-effects logistic regression of factors affecting the choice of* no*-negation (over* any*-negation) per locale*

	Toronto				Belleville				North East England				York			
Total N	783				192				319				527			
	Est.	Std error	*p*	Sig.	Est.	Std error	*p*	Sig.	Est.	Std error	*p*	Sig.	Est.	Std error	*p*	Sig.
Verb/construction																
Functional verbs																
PPs	−1.312	0.314	$2.92e^{-5}$	***	−0.687	0.725	0.343		−1.093	0.659	0.097		−0.297	0.442	0.502	
Lexical verbs	−2.973	0.227	$<2e^{-16}$	***	−3.547	0.585	$1.3e^{-9}$	***	−2.580	0.349	$1.48e^{-13}$	***	−2.384	0.241	$<2e^{-16}$	***
Sex																
Female																
Male	0.060	0.266	0.820		1.304	0.589	0.027	*	1.036	0.392	0.008	**	0.646	0.227	0.004	**
Education																
No post-secondary																
Post-secondary	−0.328	0.311	0.293		0.218	0.572	0.702		−0.578	0.469	0.217		−0.214	0.272	0.432	
Birth year																
1971–93																
1906–30	−0.369	0.379	0.330		0.389	0.768	0.613		−0.588	0.678	0.386		0.772	0.353	0.029	*
1931–50	−0.285	0.412	0.489		1.036	0.733	0.157		0.182	0.538	0.735		−0.014	0.346	0.967	
1951–70	0.057	0.300	0.850		−0.113	0.738	0.878		−0.475	0.454	0.295		−0.308	0.353	0.384	
Speaker (random)																
Standard deviation	0.662				0.836				0.605				0.149			

that this effect is significant only in Toronto and not Belleville may simply be because there are fewer tokens of PPs in Belleville (N = 13).

Consideration of the social factors shows that men use more *no*-negation than women across all four communities, at statistically significant levels in the UK locales and in Belleville, which corresponds with the distributional analysis in section 5.3. Education, on the other hand, has no significance in the variation. Birth year meanwhile shows small deviations between the groups but is significant only in York and only between the speakers born earliest (1906–30) and born latest (1971–93).

The statistical analysis therefore confirms that the most significant constraint on the variation between *any*- and *no*-negation is linguistic, i.e. verb/construction type. The social effects are secondary: there is an additional association between *no*-negation and male speakers, but no education-based effects. The evidence for ongoing change in progress is slim overall, as age is not significant in three out of four locales. The only community where a change in progress is plausible is York, given the direction of the effect and the significant distinction between the very oldest and very youngest cohorts.

7 Discussion

Our quantitative comparative sociolinguistic investigation of *any*-negation and *no*-negation in Northern England and Ontario, Canada, has demonstrated how the variation is structured, both linguistically and socially. It has situated the variation in these distinctive Englishes in the context of whether there is a continuing longitudinal change from *no*-negation to *any*-negation, or relative stability in the modern day.

Our first major finding is that regardless of locality, the underlying linguistic constraints are parallel. The choice of variant is conditioned by the same internal factor, verb/construction type, which operates consistently in all four communities: functional verbs favour *no*-negation and lexical verbs disfavour this variant. PPs pattern in-between, with the distributions suggesting a Canadian versus UK English distinction, though this is significant only in Toronto. The verb type contrast is the major constraint and corroborates previous findings (Tottie 1991a, 1991b: 232; Childs 2017; Wallage 2017). Tottie (1991a, 1991b) had argued that the high frequency of functional verbs makes them more resistant to change and more likely to retain the older *no*-negation variant than lexical verbs, which are lower in frequency. However, structural explanations, either with an appeal to the different syntactic positions of functional and lexical verbs (see Childs 2017; Harvey 2013) or to a consideration of typologically consistent soft versus hard contrasts (Burnett *et al*. 2018), can also account for the same facts. Such analyses are similarly in line with other investigations that have identified the relevance of underlying syntactic mechanisms for other English verb-related phenomena, such as DO-absence (Smith 2000). This does not preclude the possibility that frequency may still have some role to play in this variation, e.g. in maintaining the use of idiomatic expressions with *no* outside our variable context, such as *no way!* (see Peters 2008; Peters & Funk 2009). High-frequency verbs can indeed be slower to succumb to a syntactic change (see Lieberman *et al*. 2007 on verb regularization; Grieve-Smith 2009 on negation in French). However, even when studies are designed to replicate each

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

other, there can be conflicting conclusions about the role of frequency. For example, Erker & Guy's (2012) investigation of personal pronoun variation in Spanish found no independent frequency effects on the distribution (only interactions), whereas Bayley *et al*. (2013) did find such effects in their study which was specifically designed to replicate the former. Further research is therefore required into the role of frequency in morphosyntactic variation and change more generally.

Some previous synchronic corpus-based analyses of Standard English had suggested that *any*-negation is increasing at the expense of *no*-negation (Tottie 1991a, 1991b), but our data from a range of English vernaculars provide little evidence that such a change is ongoing. The exception to this is in York, where we see a significant difference between the variation for speakers born in 1906–30 versus 1971–93, but the distinction between speakers born in 1906–30 and those born in the intermediate decades (1931–50, 1950–71) is not significant. This could therefore reflect slow change in this community which is only observable after several decades. The apparent lack of change in progress in Toronto, Belleville and North East England is consistent with conclusions drawn from other recent investigations of this variation in dialects of English spoken in Glasgow and Salford in the UK (Childs 2017) and in the comparison of the variation between PPCEME and the BNC (Wallage 2017).

The distinction between York and North East England with respect to change in progress for this variable could reflect the latter's more conservative profile. The stronger persistence of *no*-negation in the North East may be a reflex of local societal norms – it is a region which has not been subject to much socio-demographic change in its recent history, largely on account of its disadvantaged status relative to the rest of the UK (Robinson 2002: 322). In York, a city that has, in contrast, undergone substantial social reorganization over the last 50 years (Huby *et al*. 1999), we see some indication of movement towards *any*-negation, though further research with a longer diachronic time-depth would allow us to investigate this trajectory.

The variation remains significantly affected by sex in all communities except Toronto, though the trend is the same: men use *no*-negation more than women. The prestige once associated with *any*-negation in Early Modern English (Nevalainen 1998: 277–8, 2006: 580; Nevalainen & Raumolin-Brunberg 2006) may therefore manifest itself in its modern-day distribution where it is favoured by women. However, as noted previously, we did not observe any effect of education on the variation. Whether speakers actually *perceive any*-negation as more prestigious than *no*-negation remains a question for further investigation, since both variants are Standard English alternatives. Based on our results, we would not expect any corresponding prestige-based stylistic variation between the variants. However, the variants have become specialized to achieve different discoursal effects, with *no*-negation favoured when introducing discourse-new information and *any*-negation more likely to relate back to discourse-old propositions (Wallage 2015, 2017; Childs 2017; see also Tottie 1991b on discourse effects on the variation).

We therefore conclude that the correlates between *no*-negation and male speech are characteristic of the difference between a conservative variant and a historically newer variant (Labov 1966 *et seq.*). The fact that significant social effects are not found in

https://doi.org/10.1017/S1360674318000199 Published online by Cambridge University Press

Toronto whereas the other communities show at least some social stratification may reflect differences in the socio-historical context, beginning with the divergent input of the founders to different parts of Ontario (who hailed from diverse dialect regions of the British Isles, the United States and elsewhere) as well as the social conditions that led to the subsequent levelling of their varieties (Chambers 1991; Dollinger 2006: 10; Tagliamonte & Denis 2014).

Our investigation demonstrates the advantages of cross-varietal comparison in the analysis of morphosyntactic variation, both for establishing the robustness of linguistic constraints on usage and identifying how the variation is embedded socially in different communities. The social patterns in the variation reflect a distinction between an older variant (*no*-negation) and a newer variant (*any*-negation), but in largely stable variation. Even in diverse global spaces such as Ontario and Northern England, we see the consistency and primacy of internal constraints on morphosyntactic variation.

Authors' addresses:

Department of Language and Linguistic Science
University of York
Heslington
York YO10 5DD
UK
claire.childs@york.ac.uk

Department of Linguistics
University of Toronto
Sidney Smith Hall, 4th Floor
100 St George Street
Toronto
Ontario M5S 3G3
Canada
c.harvey@mail.utoronto.ca

School of English Literature, Language and Linguistics
Percy Building
Newcastle University
Newcastle upon Tyne
NE1 7RU
UK
k.p.corrigan@ncl.ac.uk

Department of Linguistics
University of Toronto
Sidney Smith Hall, 4th Floor

100 St George Street
Toronto
Ontario M5S 3G3
Canada
sali.tagliamonte@utoronto.ca

References

Anderwald, Lieselotte. 2002. *Negation in non-standard British English: Gaps, regularizations and asymmetries*. London: Routledge.
Anderwald, Lieselotte. 2005. Negative concord in British English dialects. In Iyeiri (ed.), 113–37.
Bates, Douglas, Martin Mächler, Ben Bolker & Steve Walker. 2015. Fitting linear mixed-effects models using lme4. *Journal of Statistical Software* 67, 1–48.
Bayley, Robert, Kirsten Greer & Cory Holland. 2013. Lexical frequency and syntactic variation: A test of a linguistic hypothesis. *University of Pennsylvania Working Papers in Linguistics* 19, 21–30.
Beal, Joan C., Lourdes Burbano-Elizondo & Carmen Llamas. 2012. *Urban North-Eastern English: Tyneside to Teesside*. Edinburgh: Edinburgh University Press.
Berdan, Robert. 1980. *Have/Got* in the speech of Anglo and Black children. In Joey L. Dillard (ed.), *Perspectives on American English*, 377–92. The Hague: Mouton.
Biber, Douglas. 1988. *Variation across speech and writing*. Cambridge: Cambridge University Press.
Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad & Edward Finegan. 1999. *Longman grammar of spoken and written English*. London: Longman.
Boberg, Charles. 2010. *The English language in Canada: Status, history and comparative analysis*. Cambridge: Cambridge University Press.
Buchstaller, Isabelle & Karen P. Corrigan 2015. Morphosyntactic features of Northern English. In Raymond Hickey (ed.), *Researching Northern English*, 71–98. Amsterdam: John Benjamins.
Burnett, Heather, Hilda Koopman & Sali A. Tagliamonte 2018. Structural explanations in syntactic variation: The evolution of English negative and polarity indefinites. *Language Variation and Change* 30, 83–107.
Bybee, Joan & Paul Hopper. 2001. Introduction to frequency and the emergence of linguistic structure. In Joan Bybee & Paul Hopper (eds.), *Frequency and the emergence of linguistic structure*, 1–24. Amsterdam: John Benjamins.
Chambers, J. K. 1991. Canada. In Jenny Cheshire (ed.), *English around the world: Sociolinguistic perspectives*, 89–107. Cambridge: Cambridge University Press.
Cheshire, Jenny. 1982. *Variation in an English dialect: A sociolinguistic study*. Cambridge: Cambridge University Press.
Chierchia, Gennaro. 2013. *Logic in grammar: Polarity, free choice, and intervention*. Oxford: Oxford University Press.
Childs, Claire. 2016. Variation and change in English negation: A cross-dialectal perspective. PhD dissertation, Newcastle University.
Childs, Claire. 2017. Integrating syntactic theory and variationist analysis: The structure of negative indefinites in regional dialects of British English. *Glossa: A Journal of General Linguistics* 2(1), article 106. 1–31.

Corrigan, Karen P., Isabelle Buchstaller, Adam J. Mearns & Hermann L. Moisl. 2010–12. A linguistic 'time-capsule' for the Google generation: The Diachronic Electronic Corpus of Tyneside English. http://research.ncl.ac.uk/decte/ (accessed 2 May 2017).
Cowan, Helen I. 1961. *British emigration to British North America: The first hundred years*, revised and enlarged edn. Toronto: University of Toronto Press.
D'Arcy, Alexandra & Sali A. Tagliamonte. 2010. Prestige, accommodation, and the legacy of relative *who*. *Language in Society* 39, 383–410.
Dollinger, Stefan. 2006. Oh Canada! Towards the Corpus of Early Ontario English. In Antoinette Renouf & Andrew Kehoe (eds.), *The changing face of corpus linguistics*, 7–26. Amsterdam and New York: Rodopi.
Eckert, Penelope. 1989. *Jocks and burnouts: Social categories and identity in the high school*. New York: Teachers College Press.
Eckert, Penelope. 2000. *Linguistic variation as social practice*. Oxford: Blackwell.
Elliott, Bruce S. 2004. Regional patterns of English immigration and settlement in Upper Canada. In Barbara J. Messamore (ed.), *Canadian migration patterns from Britain and North America*, 51–90. Ottawa: University of Ottawa Press.
Erker, Daniel & Gregory R. Guy. 2012. The role of lexical frequency in syntactic variability: Variable subject personal pronoun expression in Spanish. *Language* 88, 526–7.
Filppula., Markku. 1999. *The grammar of Irish English: Language in Hibernian style*. London: Routledge.
Filppula, Markku. 2008. Irish English: Morphology and syntax. In Bernd Kortmann & Clive Upton (eds.), *Varieties of English: The British Isles*, 328–59. Berlin: De Gruyter.
Francis, Winthrop N. & Henry Kučera. 1982. *Frequency analysis of English usage: Lexicon and grammar*. Boston, MA: Houghton Mifflin.
Grieve-Smith, Angus B. 2009. The spread of change in French negation. PhD dissertation, University of New Mexico.
Harris, John. 1984. Syntactic variation and dialect divergence. *Journal of Linguistics* 20, 303–27.
Harvey, Chris. 2013. 'Any' and 'no' negation in Southern Ontario English. Oral presentation at *New Ways of Analyzing Variation* 42 (NWAV42), Pittsburgh.
Howe, Darin. 2005. Negation in African American Vernacular English. In Iyeiri (ed.), 173–203.
Huby, Meg, Jonathan Bradshaw & Anne Corden (eds.). 1999. *A study of town life: Living standards in the city of York 100 years after Rowntree*. York: Joseph Rowntree Foundation.
Ingham, Richard. 2013. Negation in the history of English. In Willis, Lucas & Breitbarth (eds.), 119–50.
Iyeiri, Yoko. 2001. *Negative constructions in Middle English*. Fukuoka: Kyushu University Press.
Iyeiri, Yoko (ed.). 2005. *Aspects of English negation*. Amsterdam: John Benjamins.
Jack, George B. 1978. Negative concord in Early Middle English. *Studia Neophilologica* 50, 29–39.
Johnson, Daniel E. 2009. Getting off the GoldVarb standard: Introducing Rbrul for mixed-effects variable rule analysis. *Language and Linguistics Compass* 3, 359–83.
Kayne, Richard. 1998. Overt vs covert movement. *Syntax* 1, 128–91.
Labov, William. 1966. *The social stratification of English in New York City*. Washington, DC: Center for Applied Linguistics.

Labov, William. 1972a. Negative attraction and negative concord in English grammar. *Language* 48, 773–818.
Labov, William. 1972b. *Sociolinguistic patterns*. Philadelphia: University of Pennsylvania Press.
Labov, William. 2001. *Principles of linguistic change,* vol. 2: *Social factors*. Oxford: Blackwell.
Lieberman, Erez, Jean-Baptiste Michel, Joe Jackson, Tina Tang & Martin A. Nowak. 2007. Quantifying the evolutionary dynamics of language. *Nature* 449, 713–16.
Lyons, Christopher. 1999. *Definiteness*. Cambridge: Cambridge University Press.
Mazzon, Gabriella. 2004. *A history of English negation*. London: Pearson.
Mufwene, Salikoko S. 2001. *The ecology of language evolution*. Cambridge: Cambridge University Press.
Nevalainen, Terttu. 1998. Social mobility and the decline of multiple negation in Early Modern English. In Jacek Fisiak & Marcin Krygier (eds.), *Advances in historical linguistics*, 263–91. Berlin: de Gruyter.
Nevalainen, Terttu. 2006. Historical sociolinguistics and language change. In Ans van Kemenade & Bettelou Los (eds.), *The handbook of the history of English*, 558–88. Malden, MA: Blackwell.
Nevalainen, Terttu & Helena Raumolin-Brunberg. 2006. *Historical sociolinguistics: Language change in Tudor and Stuart England*, 2nd edn. London: Routledge.
Paradis, Carita. 2003. Between epistemic modality and degree: The case of *really*. In Roberta Facchinetti, Manfred Krug & Frank R. Palmer (eds.), *Modality in contemporary English*, 191–220. Berlin: De Gruyter.
Peters, Pam. 2008. Patterns of negation: The relationship between *no* and *not* in regional varieties of English. In Terttu Nevalainen, Irma Taavitsainen, Päivi Pahta & Minna Korhonen (eds.), *The dynamics of linguistic variation: Corpus evidence on English past and present*, 147–62. Amsterdam: John Benjamins.
Peters, Pam & Yasmin Funk. 2009. *No* in the lexicogrammar of English. In Pam Peters, Peter Collins & Adam Smith (eds.), *Comparative studies in Australian and New Zealand English: Grammar and beyond*, 225–41. Amsterdam: John Benjamins.
Pichler, Heike. 2013. *The structure of discourse-pragmatic variation*. Amsterdam: John Benjamins.
Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar and the structure of IP. *Linguistic Inquiry* 20, 365–424.
Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & Jan Svartvik. 1985. *A comprehensive grammar of the English language*. London: Longman.
R Core Team. 2014. *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing.
Rissanen, Matti. 1999. *Isn't it?* or *is it not?* On the order of postverbal subject and negative particle in the history of English. In Ingrid Tieken-Boon van Ostade, Gunnel Tottie & Wim van der Wurff (eds.), *Negation in the history of English*, 189–205. Berlin: de Gruyter.
Rissanen, Matti. 2000. Standardisation and the language of early statutes. In Laura Wright (ed.), *The development of Standard English, 1300-1800: Theories, descriptions, conflicts*, 117–30. Cambridge: Cambridge University Press.
Robinson, Fred. 2002. The North East: A journey through time. *City* 6, 317–33.
Scheibman, Joanne. 2000. *I dunno*: A usage-based account of the phonological reduction of *don't* in American English conversation. *Journal of Pragmatics* 32, 105–24.

Smith, Jennifer. 2000. 'You ø na hear o' that kind o' things': Negative do in Buckie Scots. *English World-Wide* 21, 231–59.
Smith, Jennifer. 2001. Negative concord in the Old and New World: Evidence from Scotland. *Language Variation and Change* 13, 109–34.
Svenonius, Peter. 2002. Strains of negation in Norwegian. *Working Papers in Scandinavian Syntax* 69, 121–46.
Tagliamonte, Sali A. 1996–1998. Roots of identity: Variation and grammaticization in contemporary British English. Research Grant. Economic and Social Research Council (ESRC) of Great Britain. Reference #000221842. http://individual.utoronto.ca/tagliamonte/.
Tagliamonte, Sali A. 1998. *Was/were* variation across the generations: View from the city of York. *Language Variation and Change* 10, 153–91.
Tagliamonte, Sali A. 2003. 'Every place has a different toll': Determinants of grammatical variation in cross-variety perspective. In Günter Rohdenburg & Britta Mondorf (eds.), *Determinants of grammatical variation in English*, 531–4. Berlin: De Gruyter.
Tagliamonte, Sali A. 2003–6. Linguistic changes in Canada entering the 21st century. Research Grant. Social Sciences and Humanities Research Council of Canada (SSHRC). Reference #410-2003-0005. http://individual.utoronto.ca/tagliamonte/.
Tagliamonte, Sali A. 2013. *Roots of English: Exploring the history of dialects*. Cambridge: Cambridge University Press.
Tagliamonte, Sali A. & Derek Denis. 2014. Expanding the transmission/diffusion dichotomy: Evidence from Canada. *Language* 90, 90–136.
Tieken-Boon van Ostade, Ingrid. 1997. Negation in Sarah Fielding's letters. In Udo Fries, Viviane Müller & Peter Schneider (eds.), *From Ælfric to the New York Times: Studies in English corpus linguistics*, 183–95. Amsterdam: Rodopi.
Tottie, Gunnel. 1991a. Lexical diffusion in syntactic change: Frequency as a determinant of linguistic conservatism in the development of negation in English. In Dieter Kastovsky (ed.), *Historical English syntax*, 439–68. Berlin: De Gruyter.
Tottie, Gunnel. 1991b. *Negation in English speech and writing: A study in variation*. London: Academic Press.
Trousdale, Graeme. 2012. English dialects in the north of England. In Bernd Kortmann & Kerstin Lunkenheimer (eds.), *The Mouton world atlas of variation in English*, 70–7. Berlin: de Gruyter.
Tubau, Susagna. 2016. Lexical variation and negative concord in traditional dialects of British English. *Journal of Comparative Germanic Linguistics* 19, 143–77.
Van Herk, Gerard. 2012. *What is sociolinguistics?* Malden, MA: Blackwell.
van Kemenade, Ans. 2000. Jespersen's cycle revisited. In Susan Pintzuk, George Tsoulas & Anthony Warner (eds.), *Diachronic syntax: Models and mechanisms*, 51–74. Oxford: Oxford University Press.
Wallage, Phillip. 2012. Quantitative evidence for a feature-based account of grammaticalisation in English: Jespersen's cycle. In Terttu Nevalainen & Elizabeth C. Traugott (eds.), *The Oxford handbook of the history of English*, 721–34. Oxford: Oxford University Press.
Wallage, Phillip. 2015. Identifying the role of pragmatic activation in changes to the expression of English negation. In Pierre Larrivée & Chungmin Lee (eds.), *Negation and polarity: Experimental perspectives*, 199–227. London: Springer.
Wallage, Phillip. 2017. *Negation in early English: Grammatical and functional change*. Cambridge: Cambridge University Press.

White, Randall. 1996. *Ontario 1610–1985: A political and economic history*. Toronto: Dundurn Press.
Willis, David, Christopher Lucas & Anne Breitbarth. 2013. Comparing diachronies of negation. In Willis, Lucas & Breitbarth (eds.), 1–50.
Willis, David, Christopher Lucas & Anne Breitbarth (eds.). 2013. *The history of negation in the languages of Europe and the Mediterranean*. Oxford: Oxford University Press.
Zeijlstra, Hedde. 2004. *Sentential negation and negative concord*. Utrecht: LOT.
Zeijlstra, Hedde. 2011. On the syntactically complex status of negative indefinites. *Journal of Comparative German Linguistics* 14, 111–38.